DOCUMENT RESUME

ED 051 414 VT 013 328

AUTHOR	Bachman, Jerald G.
TITLE	Youth in Transition. Volume II, The Impace of Family Background and Intelligence on Tenth-Grade Boys.
INSTITUTION	Michigan Univ., Ann Arbor. Survey Research Center.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
PUB DATE	70
NOTE	293p.
AVAILABLE FROM	Publications Division, Institute for Social Research, University of Michigan, 426 Thompson St., Ann Arbor, Michigan 48106 ($5.00 paper; $7.00 cloth)
EDRS PRICE	EDRS Price MF-$0.65 HC-$9.87
DESCRIPTORS	*Behavioral Science Research, Environmental Research, *Family Background, Grade 10, *Individual Characteristics, Intelligence, Interaction Process Analysis, Interviews, *Longitudinal Studies, Males, National Surveys, Personality Studies, Questionnaires, *Socioeconomic Background
IDENTIFIERS	Youth in Transition Project

ABSTRACT

This is the second volume in a series that documents the Youth in Transition project, a national longitudinal study of about 2,200 10th grade boys in public schools. This document deals with family background factors and abilities as they relate to a variety of personality characteristics, behaviors, and plans for the future. Major units include: (1) Dimensions of Family Background, (2) Interrelationships Among Background Characteristics, (3) Intellectual Aptitudes and Abilities, (4) Self-Concept of School Ability, (5) Motives, (6) Self-Esteem, and Other Affective States, (7) Values and Attitudes, (8) Behaviors, and (9) College Plans and Occupational Aspirations. The conclusions indicate that the socioeconomic level is perhaps the most important of the family background measures, and that the family background factors influence intelligence and job information. Extensive appendixes, illustrative figures and tables, and a bibliography are included. Volume one is available as ED 026 463. (GEB)

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ED051414

Youth in Transition

VOLUME II

The Impact of Family Background and Intelligence on Tenth-Grade Boys

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ED021414

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Library of Congress Catalog Card Number: 79-630045

Printed by Braun-Brumfield, Inc., Ann Arbor, Michigan
Manufactured in the United States of America

First Printing 1970

PREFACE

This book is the second in a series of monographs documenting the Youth in Transition project. Youth in Transition is a longitudinal study of high school age boys, conducted by the Survey Research Center* under the primary sponsorship of the United States Office of Education.** The study is, in the broadest sense, an exploration of the effects of social environments on adolescent boys, with special emphasis on the impact of school and work environments.

The present volume deals with family background factors and abilities as they relate to a variety of personality characteristics, behaviors, and plans for the future. Early in the planning phases of the project we agreed that our first major analysis effort should deal with the effects of family background because of our substantive interest in this area, and because an understanding of family background effects is a prerequisite to conducting longitudinal analyses of other factors affecting adolescent boys.

Another more pragmatic reason for giving early attention to family background was the opportunity to draw some fairly firm conclusions prior to the availability of longitudinal data.*** Given our extensive analysis plans for the project as a whole, we wanted to complete this first phase as soon as possible. Accordingly, we decided that this analysis would be limited to the base-line data collected from our initial sample of about 2200 tenth-grade boys in U.S. public high schools. In effect, we planned to conduct this family background study as if our project were cross-sectional rather than longitudinal.

But things did not work out entirely according to plan. Preparing the monograph took longer than anticipated, partly because we were simultaneously conducting follow-up data collections. The writing of this volume was not completed before some follow-up data were ready for preliminary analysis. This presented an opportunity to look at the cross-time stability of the relationships we had been studying. Adding the brief section on longitudinal findings meant more delay. So, this volume appears about a year later than we first expected; but it contains a bit of longitudinal data—perhaps just enough to whet the appetite.

---

*Survey Research Center is one of three divisions of the Institute for Social Research of The University of Michigan; the other two centers are: Research Center for Group Dynamics and Center for Research on Utilization of Scientific Knowledge.

**Additional support for some phases of the research has been provided by the United States Department of Labor and the United States Department of Defense.

***For example, if one finds that educational aspirations are correlated with family socioeconomic level, he can assume that family background influences aspirations rather than the reverse.

We have tried to deal with a large number of dimensions in this volume. Even after vigorous pruning, eight or nine predictor variables remain, and they are related to more than twenty-five criterion dimensions (dependent variables). This has limited our ability to explore particular dimensions and relationships intensively. For example, instead of a detailed replication of the self-esteem findings of Rosenberg and Coopersmith, we had to content ourselves with a few comparisons between our findings and theirs.

In short, there is a degree of open-endedness in some of what follows. But tentativeness is always a part of the research process; it is merely exaggerated in a longitudinal study, when the suggestions for future research are directed most immediately at one's self and one's co-workers. So the reader at times may share our frustration at seeing an interesting line of inquiry that has not been pursued all the way to its conclusion in this volume. Yet, there is good basis for hope that the matter will be studied further in a subsequent volume in this series.*

Guidelines for Using this Book

The organization of chapters in this monograph can be summarized very briefly. Chapter 1 presents an overview of the research design, sample and procedures. Chapter 2 defines (operationally) eight major family background dimensions; Chapter 3 presents the interrelations among them; and Chapter 4 relates them to intelligence and other ability dimensions. Chapters 5 through 10 present a series of analyses in which the eight family background dimensions plus intelligence are related to a large number of criterion dimensions. Finally, Chapter 11 summarizes the findings by taking each predictor dimension in turn and looking at its effects on the whole range of criteria.

This arrangement of findings permits the selective reader to focus on only the subset of dimensions of interest to him, using the table of contents or the index as a guide. Some readers may wish to begin with the last chapter, since it summarizes the findings of the whole volume (although those who expect to read the whole monograph would do better to save the final chapter for the end).

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*Some topics for future volumes are noted on page 214 of this volume; work on several of them is underway.

The present analyses of family background effects represent only one part of the larger Youth in Transition project. While this volume is designed to stand alone, the reader who wishes to view it in the context of the total research effort will find it useful to refer to Volume I in this series, *Blueprint for a Longitudinal Study of Adolescent Boys*. The blueprint includes a description of the major research objectives in the project along with an extensive treatment of sampling and data collection procedures. Blueprints have a way of being modified once the actual work is underway, however, and ours is no exception. Thus we must take the next few moments to update the design outlined in our first volume.

*Updated Study Design**

The first and second data collections were carried out according to the original schedule: Fall of 1966 and Spring of 1968. The plan called for a reduction in panel size for the second data collection. As the time for that data collection approached, however, we came to feel more and more that the advantages of keeping a complete cross-section were worth the moderate additional cost; fortunately, our sponsors agreed. A total of 1886 respondents in our "probability sample" participated in the second data collection in Spring of 1968; this represents 85.2 percent of the 2213 who *took part* in the first data collection, and 82.8 percent of the initial *sample* who had been invited to participate at the start of the study.

A third data collection, not part of our original design, was carried out in the Spring of 1969. This extra data collection was limited to self-administered questionnaires which the young men filled out in small groups. Its purpose was to obtain information from our subjects just before most of them made the transition out of high school and into some other major environment. A total of 1799 respondents in the probability sample participated in the third data collection, representing 81.3 percent of the original participants and 79.0 percent of the initial sample.

A fourth data collection is now scheduled to take place in Spring and early Summer of 1970, nearly a year after most young men have left high school. (This corresponds to what was originally planned to be the third and final data collection; the chief difference is that it will occur about six months later than first planned.)

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*This section is adapted from the "Preface to Second Printing—August, 1969" of Volume I.

The collection of information from school personnel was carried out according to schedule in Spring of 1968. All 87 schools in our original sample agreed to provide organizational information. We obtained questionnaire data from 100 percent of the principals, 99 percent of the heads of counseling, 87 percent of all counselors, and 70 percent of the sample of teachers. We thus have a wealth of data on school environments to relate to the experiences of the young men in our panel.

In summary, the past several years have seen the accomplishment of much that was outlined in our 1967 blueprint. Some changes have been made, but these were changes in procedure rather than in basic purpose. The rate of continuing participation has been most gratifying. It reflects the ingenuity and perserverance of many Survey Research Center interviewers and the Field Office staff; but even more, it indicates the interest and enthusiasm of the young men and school personnel who have been exceedingly generous in contributing the data for this project. Experiences of this sort have made it easier for us to accept the delay of gratification that a longitudinal study necessarily entails.

Acknowledgements

It has been my privilege during the past few years to work with many talented and dedicated colleagues on this project staff and elsewhere within the Institute for Social Research. While the writing of this monograph was my assignment, the work reflects the contributions of many others.

Special thanks are due to Ilona Wirtanen, who helped me in virtually every phase of the planning, analysis, writing and editing of the manuscript, and who did most of the work in preparing figures and tables. I am also indebted to Terrence Davidson for organizing the data analysis and providing editorial suggestions, to Allison Arscott for managing our data library and reporting much of the data in their initial working paper form, and to Lloyd Johnston for making many helpful suggestions for improving the text. I deeply appreciate Robert Kahn's careful editing of nearly all of the manuscript; he has done much to make the final product more readable.

I appreciate the help of many others who read portions of the manuscript and offered suggestions: Frank Andrews, Paul Beck, David Bowers, Martin Frankel, Martin Gold, Patricia Gurin, Kent Jennings, Jerome Johnston, Leslie Kish, George Levinson, Martha Mednick, Willard Rodgers, John Sonquist, and Jay Williams.

I am grateful to Douglas Truax for final editing, to William Haney for editorial suggestions, to Lee Behnke for printing arrange-

ments, to Mary Jacobs for help in the preparation of figures, and to Rita Lamendella, Claire Taylor, and Patricia Veerkamp for typint several drafts of the manuscript.

Many others at the Institute for Social Research helped to collect and analyze the data reported here. Thanks are due to the members of the Sampling, Field, and Coding Sections, and the Computer Services Facility.

A good many people have served on the Youth in Transition project staff during the past five years. Some have already been noted above, but it is a pleasure to acknowledge them all in the listing that follows.

A final word of thanks is reserved for my wife Virginia. Her help in this volume covered a wide range from editorial suggestions to proofreading. Most important has been her steadfast encouragement throughout the project.

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Chapter 1

INTRODUCTION

Family background is a powerful force—or, more accurately, a cluster of powerful forces—shaping an individual's capacities and accomplishments throughout his lifetime. The educational and occupational attainments of parents, the physical resources of the home, the personal relationships between parents and children—these factors and many more are what we mean by family background. The impact of this background is visible early in the life of a child; his intelligence and ability to perform in school are in part predictable from knowledge of his background. Later, in adolescence, his educational and occupational aspirations are predictable in part from the attainments of his parents. Still later, his own attainments reflect quite clearly the stamp of his family background. Not only are his attainments influenced by family background; his values, attitudes, and mental health are all subject to the pervasive and continuing effects of the family.

As researchers interested in the impact of social environments, we tend sometimes to think of the family *environment* as the primary determinant of the effects mentioned above. But many factors that cause different family environments are also implicated in different *genetic* endowments. Thus we are dealing with both nature and nurture—and the two are closely intertwined in each individual's family background. In our examination of the impact of family background we have not tried to extricate heredity from upbringing. Efforts to separate these effects may be of great importance and potential value, but they are beyond the scope of the data for this monograph. Thus we will have to remind ourselves from time to time that a child's inheritance is both biological and social and that such background factors as parents' educational attainment are likely to involve both aspects of that inheritance.

The Description of Family Background and Its Impact

In this monograph we will describe some major dimensions of family background for a nationwide sample of adolescent boys—participants in the first stage of a continuing research project entitled Youth in Transition. These background dimensions include the occupational and educational attainments of parents, the nature of interpersonal relationships between a son and his parents, and family patterns of religious and political preference. In addition, because of its pervasive importance in our present society, we have decided that our set of family background characteristics should include race.

We will begin by noting how our sample is distributed along each dimension. Next we will consider the ways in which these dimensions are interrelated. Finally, we will devote the bulk of this monograph to exploring relationships between background factors and a variety of "criterion" dimensions of central interest in our study. Such criterion dimensions include:

(a) *aptitudes and abilities*, as measured by standardized tests;

(b) *affective states*, such as general happiness, anxiety, depression, guilt, and satisfaction with life;

(c) *aspects of the self-concept*, including self-esteem and perceptions of abilities;

(d) *values and attitudes*, such as social responsibility, attitudes toward jobs, and the perception that one can control his own destiny; and

(e) *plans and behaviors*, particularly those involving education and occupation.

Why Study Family Background as a Part of the Youth in Transition Project?

The Youth in Transition project is a longitudinal study of adolescent boys. Its primary purpose is to study changes that occur in young men as a result of their social environments, especially high school and work.[1] The relevance of family background to this central purpose is apparent at several levels.

A knowledge of the impact of family background provides a useful context within which to pursue our other research aims. In a very real sense, this background constitutes the first reality for the individual; long before the school and the world of work have their opportunities to influence his development, the family has played a crucial role. If we want to understand how individuals are changed by their school and work experiences, it is essential to know something about how they have already been shaped by their family background. At the very least, we must be able to control for family background factors in our later analyses of the impacts of school and job.

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[1] For an extended discussion of these purposes see Bachman et al., (1967), chapter 2.

But we want to do more than just control family background in a statistical sense. We want to know the size and importance of these background effects in order to have a context within which to assess the importance of other factors we will be examining. For example, we might find that there are some genuine "school effects" on a boy's college aspirations but it is also possible that such effects will be greatly overshadowed by the influence of family background. An awareness of family background effects should give us a much clearer perspective as we approach our basic aim of understanding the impact of contemporary social environments.

Finally, apart from its contribution to our larger research aims, we consider the study of background factors to be interesting and important in its own right. Our sample and measures were not designed primarily for the study of background effects, and at times this will limit our conclusions. Nevertheless, we think that the initial work provides data worth analyzing and findings worth reporting now, while the rest of the longitudinal study is still in progress.

Research Design

The research design for the study of Youth in Transition is described extensively in the first volume of this monograph series (Bachman, et al., 1967, chapter 3). In brief, the design is centered around a nationally representative panel of over two thousand adolescent boys who have agreed to be surveyed repeatedly at intervals of a year or more. The study began in the fall in 1966, when the subjects had just entered tenth grade; additional data collections have been carried out in the spring of 1968 (the end of eleventh grade for most of the boys), and in the spring of 1969 (just before most were graduated). Another survey of the panel is planned for the spring of 1970.[2] The panel members, at the time of the initial survey, were clustered in 87 schools throughout the United States.[3] Additional data concerning school environments have been obtained from principals, counselors, and samples of teachers in each of the participating schools. This information will be of great value in longitudinal analyses focusing on school effects.

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[2] This sequence of data collections represents an improvement over that projected in our first volume. The *Preface* provides further information on this revision.

[3] A small additional panel, located in a limited number of "discretionary" schools, is also being studied; however, data from this supplementary panel are not reported in the present monograph.

The overall research design is longitudinal, but the first collection of data in such a design can of course be treated as a cross-section survey. It is this cross-section of tenth-grade boys that provided the data for the present report of background factors and their impact.

Sample. The sample consists of 2213 tenth-grade boys. located in 87 public high schools. The schools and boys were selected through a multi-stage sampling design in such a way that the probability of a school's selection was proportionate to its size (i.e., the estimated number of tenth-grade boys), and roughly equal numbers of boys (about 25) were selected from each school. The net effect of this design is to provide an essentially bias-free representation of tenth-grade boys in public high schools throughout the United States (see Bachman, et al., 1967, pp. 21-24).

Response rates must be considered at two levels. A total of 88 schools were originally invited to participate in the study; an affirmative response was obtained from 71, and replacement schools in the same sample areas were secured for all but one of the remaining schools. In the resulting 87 participating schools, 2277 boys were invited to participate in the study. A total of 2213 (over 97 percent) agreed to participate and provided essentially complete data.

The high response rate among boys in our sample avoided to a very large degree one potential source of bias, non-response. However, another source of bias remained in the group of 2213 boys. In some cases it was not possible to obtain a sufficiently large sample to represent a school properly; for example, it would be impossible to obtain a sample of 25 boys in a small rural school having only 16 tenth-grade boys. This problem has been treated in detail elsewhere (Bachman, et al., 1967, pp. 126-127); our solution has been to use weighting to correct for these kinds of biases in our sample. The procedure consisted of giving double weight to 299 of our respondents and triple weight to one respondent. Accordingly, in the tables to follow we will show a total of 2514 responses based on a sample of 2213 respondents.

It would be misleading, of course, to view our findings as having the same degree of statistical precision as ones derived from a strictly *random* sample of 2213 respondents. The fact that our data are based on a clustered sampling design, and one involving some degree of weighting, necessarily means that our sampling errors will be larger than those involved in a random sample of equal size. Appendix A presents data and discussion concerning sampling errors in this monograph.

On the whole, our sample can be fairly described as a cross-section of tenth-grade boys in United States public schools as of the fall of 1966. Its size is adequate for our major purposes, even though clustering by schools leads to larger sampling errors than would occur in an unclustered sample.

The limitations of the sample become more severe when we analyze subsets of the sample—particularly subsets affected by the school clustering. The most serious problem of this sort involves the black subset of our sample. While the number of black students in our sample (256—about 11% of the total) is fairly consistent with census data, the majority of these cases is located in only a handful of all-black schools. This is no doubt consistent with reality--most blacks do attend segregated schools. But given our sampling methods this means that our data on blacks are drawn from just a few clusters, and are thus subject to a great deal more sampling error than is true for our white respondents. While, as will be argued later, this does not mean that we can simply ignore race as a background variable, it does mean that our reasonably good national cross-section of *all* tenth-grade boys is not nearly as good a sample of black tenth graders. Accordingly, our findings concerning race as a background factor will have to be carefully qualified.

Data Collection Procedures. The data collection procedures, including copies of the instruments, are detailed in the first volume of this series; an excerpt is sufficient for our present purposes (Bachman, et al., 1967, p. 25).

> Time I: October-November 1966. This initial data collection involved a personal interview and a battery of group-administered tests and questionnaires. . . . Interviews lasted an average of just over two hours. The interviewing was carried out in the schools during school hours, by the Survey Research Center's staff of trained interviewers. One or two interviewers were assigned to each school.
>
> After all interviewing had been completed in a school, the participants as a group spent a morning or afternoon during school hours to complete the tests and questionnaires. These group sessions were conducted by the interviewers, following standardized instructions.

Some Non-Statistical Notes on Statistical Procedures

Although this monograph includes much statistical data, it is designed to be read by non-statisticians. We have tried to present findings in forms that will be meaningful to those with limited statistical training. This does not mean that we have avoided complex or sophisticated analytic procedures; rather, it means that we have tried to explain the results of such procedures in relatively non-technical terms. With this approach in mind, let us consider a few of the conventions that will be followed in reporting data.

Statistical Significance. It is important in survey research, as in other research methods, to distinguish between haphazard and systematic variation in any set of data. Tests of statistical significance represent *one* of the bases for making such distinctions (Winch and Campbell, 1969). However, it is difficult to arrive at significance levels based on a multi-stage clustered sample, and the problem becomes still more complex when we use multivariate analysis procedures. Accordingly, *it will not be our practice to declare certain relationships "statistically significant."* This does not mean that many of the relationships discussed in this monograph are not statistically trustworthy. On the contrary, given the size of our sample, virtually all of the relationships we interpret as *substantively* significant would easily meet conventional criteria of statistical significance. We deal with issues of sampling error, confidence intervals, and statistical significance in Appendix A.

Substantive Significance. Substantive significance is in large measure a matter of judgment. An author's judgment of substantive importance is reflected in the findings he chooses to present. Ideally, however, these findings are presented in forms that permit the reader to make his own judgments about their substantive significance. In this monograph we have adopted several practices designed to accomplish this purpose. Most important, we report overall relationships in terms of strength of association or amount of variance explained; and when we contrast subgroups, we consider the extent to which they overlap as well as differ. The effect of this form of reporting may be to make some findings less dramatic, but hopefully more realistic. Another practice involves presenting more data than we can discuss, so that when a reader wishes to examine a set of findings closely he is able to do so. Much of this extra information has been placed in appendices, although some also appears in tables and figures within chapters. In either case, it is assumed that most readers will need and use much less than the total amount of statistical data provided.

Eta Versus Product-Moment Correlation. Two measures of correlation are used extensively in this monograph; a few distinctions between them are noted here. The product-moment correlation, or Pearson's r, is a widely used measure of the *linear* association between two continuous variables. The product-moment correlation can range from 1.00 (indicating a perfect positive relationship), through zero (indicating no association), to -1.00 (indicating a perfect inverse relationship).

Another measure of association is Eta, the correlation ratio. For readers who are unfamiliar with this statistic, it may be helpful to note that Eta is analogous in some ways to r, and to a degree it can be interpreted similarly. The most important differences are (a) Eta can be used with categorical variables, thus making it particularly appropriate for such predictors as race or religion; (b) it is not restricted to linear relationships. Another difference between Eta and r is trivial but potentially confusing: Eta has a range from zero to 1.00; it never takes a negative value when describing a relationship. In general, the absolute values of Eta and r are practically identical, when applied to interval or ratio scale data, whenever the association between predictor and criterion turns out to be linear; when the association is non-linear, Eta is larger than r. This means that Eta is better suited for many exploratory analyses, because of its ability to detect linear and non-linear associations equally well. Another advantage of Eta is that it works for a wider range of predictors, since any continuous variable can be made categorical but many categorical variables cannot be treated as continuous (Nunnally, 1967). For these reasons, *we use Eta almost exclusively in reporting correlations between family background predictors and criterion dimensions.*

There are occasions when it is more convenient to report r than Eta. In most cases, categorical versions of criterion dimensions were not developed, thus making it much more convenient to compute r. Moreover, in looking at relations among criteria we are willing to restrict our attention to linear association. Accordingly, *we use* r *in those instances when we examine correlations among criteria.*

Summary

An examination of family background is the starting-point for the analysis of data from the Youth in Transition project. It will provide a context for many subsequent analyses, and is itself the first use of the cross-sectional data that form the base-line of our longitudinal study of adolescent boys.

The sample consists of 2213 tenth-grade boys located in 87 public high schools throughout the United States. Data for the study were collected in the schools through the use of personal interviews and group-administered tests and questionnaires.

Two cautions are important at the start of this study. One has to do with the limitations of our sample in describing specific subgroups, particularly blacks. The second concerns the joint operation of nature and nurture that is present in these background effects.

Chapter 2

DIMENSIONS OF FAMILY BACKGROUND

Any attempt to select and define the major dimensions of family background is almost certain to be incomplete and arbitrary. The present effort is surely no exception. What follows in this chapter is a listing of *some* important family background characteristics, and a description of our operational definitions of them. We make no claim that the list is complete, and we freely admit that some richness of detail has been sacrificed in the interest of keeping the list relatively short. Nevertheless, it is our hope that the dimensions outlined below capture much of what is important—and measurable—in the family background of adolescent boys.[1]

Socioeconomic Level

One of the most important aspects of family background is socioeconomic level. Social scientists are more agreed about its importance, however, than they are about its meaning. On one hand, sociologists with a major interest in social stratification think in terms of rather discrete social *classes* existing in any community. Opinions differ somewhat about the number of such class levels and the primary bases for class distinctions; but there is a common dominant interest in status or prestige, and factors such as education, income, and occupation are viewed as determinants of social status. On the other hand, many investigators whose primary interests lie elsewhere are content to view education, income, and the like simply as dimensions to be used (more or less interchangeably) for "controlling on socioeconomic status."

Our own approach differs somewhat from both of these. Our interest in socioeconomic level goes beyond a need for analytic control; we find it interesting in itself. Our interest is not, however, focused primarily on stratification by status or prestige. We consider that a number of intercorrelated factors in a family—such as parents' educational and occupational levels, income, and the possession of certain goods (e.g., books, typewriters, cameras)—are all determinants of whether a home is a rich environment for learning, an environment in which education and achievement are likely to be encouraged. It happens that some of these same factors reflect parental abilities and aptitudes (e.g., intelligence), and are thus likely to be related to the genetic endowment of children. For both of these reasons, we find it extremely important to include socioeconomic level among our measures of family background.

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[1] Our list of family background dimensions overlaps considerably with those used in Project TALENT (Flanagan, et al., 1964), and includes virtually all the "student background factors" treated in the Coleman report (Coleman, et al., 1966).

Given an interest in the academic, occupational, and social accomplishments of parents, and given several measures of these factors, we had to decide whether to analyze them separately or combine them into a single measure of socioeconomic level. We preferred the latter alternative for two reasons. From a theoretical standpoint, the considerable overlap among the various aspects of socioeconomic level would have made it very difficult to attribute the variance in some criterion to one particular aspect of socioeconomic level. Moreover, the use of a single socioeconomic index greatly simplifies our analysis.

Use of a composite measure of socioeconomic level is justifiable to the extent that (a) its components are strongly intercorrelated and (b) it captures most of the predictive power that the components would have if they were permitted to operate separately. After all, it is quite possible that one combination of socioeconomic characteristics will relate best to one criterion, whereas a different set is optimal for predicting to another criterion. One of our first analysis efforts was to determine whether this would be a serious problem in our study. A description of the analysis strategy and the results is presented in Appendix B. The findings clearly indicate that for our purposes a single composite measure of socioeconomic level is quite appropriate.

A Composite Measure of Socioeconomic Level. The development of the composite measure is also documented in Appendix B, along with procedures for calculating the summary score. The discussion below outlines the six ingredients of that measure, and describes the sample in terms of these ingredients.

The following ingredients, weighted equally, are the basis for our measure of socioeconomic level (SEL)[2]:

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[2] We prefer the more neutral and inclusive term "socioeconomic level" (SEL) to the more familiar "socioeconomic status" (SES).

1. Father's occupational status.
2. Father's education.
3. Mother's education.
4. Possessions in the home.
5. Number of books in the home.
6. Number of rooms per person in the home.

Father's Occupational Status. During the interview each boy was asked to describe his father's occupation. The responses were coded according to Duncan's socioeconomic index of occupations (Reiss, 1961). For occupations of fathers in our sample, the mean Duncan scale value was 38, and the median was 37. Examples of Duncan values in this general range are retail sales workers, postal clerks, plumbers, and machinists.

Parents' Education. Parents' levels of educational attainment, as reported by their sons in the interview, are summarized in Table 2-1. As the table indicates, the median level of education for fathers and mothers is the same—high school graduation. More fathers than mothers have completed college, but it is also the case that more fathers failed to reach high school.

TABLE 2-1

PARENTS' EDUCATION

Highest Level of Education	Fathers	Mothers
Less than high school	21%	13%
Some high school	19%	19%
Completed high school	30%	46%
Some college	10%	9%
Completed college	11%	7%
Missing data	9%	6%

Possessions in the Home. A list of 19 items was presented in the questionnaire, and each respondent was asked to indicate which items were in his home. The list of items, along with the percent of respondents reporting each item as present in his home, is presented in Table 2-2. The things listed range from very common objects (radio, television, dictionary) to less frequent possessions (typewriters, binoculars). A heavy emphasis is placed on educationally relevant objects (encyclopedia, globe, newspapers and magazines).

TABLE 2-2

POSSESSIONS IN THE HOME

Item	Percent of Boys Who Have the Item in Their Home
A radio	97
A telephone	90
A television	96
A bicycle	84
A phonograph	87
A Bible	94
A dictionary	96
A set of encyclopedias	81
30 other books or more	86
A family car	92
A camera	92
A typewriter	66
A dog or cat	67
A fish in a tank	20
A newspaper delivered daily	79
A magazine subscription	79
A pair of binoculars	49
More than 10 phonograph records	88
A map or globe of the world	81
MEAN NUMBER OF ITEMS CHECKED	15.2 out of 19

A respondent's "score" along this dimension consisted of the total number of items he checked as being present in his home; the mean score for all respondents was just over 15 items.[3]

Number of Books in the Home. A single questionnaire item asked a respondent to check the number of books in his home, using a six-point scale. The responses to this item are summarized in Table 2-3. The item was one of several questionnaire items taken from the Student Information Blank used in Project TALENT's massive national survey of high school students (Flanagan, et al., 1964). Our frequency distribution for tenth-grade boys in 1966 is nearly identical to that reported by Flanagan, et al., for their sample of twelfth-grade males in 1960.

TABLE 2-3

NUMBER OF BOOKS IN THE HOME

How many books are in your home?	Percent of Males in Project TALENT[a]	Percent of Respondents in Youth in Transition Project
None, or very few (0-10)	6	4
A few books (11-25)	18	13
One bookcase full (26-100)	38	35
Two bookcases full (101-250)	22	25
Three or four bookcases full (251-500)	12	16
A room full -- a library (501 or more)	4	5
Missing Data		2

[a] Source: Flanagan, et al., (1964, p. 5-17).

Number of Rooms per Person in the Home. Two open-ended questionnaire items adopted from Project TALENT asked a respondent to write in the number of people living in his home and the number of rooms in his home. ("Count all rooms: bedrooms, bathrooms, kitchen, living room, dining room, recreation room, enclosed porch, etc.") About half of the respondents reported five to eight rooms in their homes, and the other half reported nine or more rooms. The median number of people living at home was five. A "rooms per person" ratio was computed for each respondent simply by dividing the total number of rooms by the total number of persons in the home; the median value was found to be 1.8 rooms per person.[4]

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[3] The list of items is the first part of the Mathis (1966) "Environmental Participation Index."

The Meaning of Socioeconomic Level (SEL). As we noted earlier, there is no broad agreement about just what is meant by the terms socioeconomic status and socioeconomic level. We have just examined the dimensions which, weighted equally, provide the composite measure of SEL used in the present study. In summary, the measure consists of one "part" father's occupational status, two "parts" parents' education, and three "parts" having to do with family possessions. While most or all of these ingredients undoubtedly have a bearing upon a family's status in the eyes of the community, they have perhaps even more to do with the quality of home environment available to children. To the extent that this is true, the SEL index is particularly well suited as a measure of one class of family background influences in our study of adolescent boys.[5]

Status Inconsistency of Parents

In the preceding section we discussed the advantages and disadvantages of combining several different indicators of socioeconomic level or status. This issue becomes relevant again when we consider the possible effects of status inconsistency. In a preliminary exploration of status inconsistency in our study, Davidson presented the issue as follows (Davidson, 1968, p. 4-1):

> As an additional step in our analyses of the effect of family background characteristics upon the plans and behaviors of adolescent boys, we undertook to discover if inconsistencies along some of these SEL dimensions might affect criterion scores in a manner not indicated by the SEL index score itself. For example, imagine the families of two boys in our sample; family A consists of a father who has completed the eighth grade and a mother who is a college graduate; in family B, both the mother and father are high school graduates. The contribution of parents' education to our SEL index would be identical for both families; but it is quite conceivable that the structural differences in these two families produce quite different effects on the plans and behaviors of the two boys in our sample.

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[4] This "rooms per person" ratio was found to be more effective (see Appendix B) than a *separate* treatment of number of rooms and number of persons.

[5] Our index of socioeconomic level corresponds closely with the measure of "socioeconomic environment" used in Project TALENT studies (see Flanagan and Cooley, 1966, Appendix E).

> The kind of inconsistency found in family A is typically called "educational discrepancy." Another type of status inconsistency occurs when a parent has an occupation that does not seem to "match" his attained education. For example, a father who is a college graduate may be employed on an assembly line. This second type of inconsistency, called "paternal incongruity," could also produce measurable effects on the plans and behaviors of boys.

Davidson's conclusion was clearly negative: "As a whole these analyses give little, if any, support to the notion that paternal incongruence and educational discrepancy are important explanatory variables" (Davidson, 1968, p. 4-12). Additional analyses have confirmed this initial conclusion; for the criterion variables treated in this monograph, there are virtually no measurable effects related to these dimensions of parental status inconsistency.

Family Size and Ordinal Position

A good deal has been written about the birth-order of children and the differences between first-born, last-born, and middle-born children. It thus seemed appropriate in a monograph dealing with family background effects that this dimension—ordinal position—should be examined carefully. Our first approach to this area was somewhat analogous to our treatment of socioeconomic level; we set about to find the simplest measure that would capture most of the effects of ordinal position. One important constraint in the development of such a simplified measure was the requirement that it not be confounded with family size. The problem can be stated quite simply: there is only one first-born and one last-born in any family of two or more children, but the number of middle-born children is directly related to family size. The solution to the problem is less simple, unless one decides to ignore the middle-born children. Our first approach was to examine some effects of ordinal position separately for each level of family size. Our expectation was that this rather detailed level of analysis would provide the basis for formulating a summary measure of ordinal position. Somewhat to our surprise, we found that there was very little relationship between ordinal position and our criterion dimensions. Further analyses led to the same conclusion; birth order does not seem to make a measurable difference in analyses that hold family size constant.[6]

Number of Siblings. The exploratory analyses mentioned above did not show ordinal position effects; however, in the process

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[6] Much of the analytic work on ordinal position was carried out by Bernard Banet.

TABLE 2-4

NUMBER OF SIBLINGS

How many brothers and sisters do you have?	Percent Respondents
None	6
One	20
Two	22
Three	19
Four	12
Five	8
Six	5
Seven or more	8

of controlling family size we found that the number of siblings in a family is related to several criterion dimensions. Accordingly, we have included number of siblings in our list of family background dimensions. The distribution of our sample according to number of siblings is presented in Table 2-4.

Broken Home

It is generally agreed that the most favorable family environment is one in which both parents are present. Many consider it a profound disadvantage for a child to live in a family that is broken either by death or by divorce or separation. Given this widespread view, it seemed essential that intactness of family be measured among our background factors.

Eight percent of our respondents reported in the interview that one or both of their natural parents were not living; 5 percent said only the mother was living, 2 percent reported only the father living, and 1 percent said neither was living. When the remaining 92 percent were asked if they currently lived with both of their parents, 79 percent (of the total sample) said that they did. Most of the 13 percent not residing with both living parents reported divorce or separation as the cause.

A description of all respondents in terms of their living arrangements is presented in Table 2-5. As would be expected, many more respondents from broken homes remain with the mother (13 percent) than with the father (3 percent).

While the classification shown in Table 2-5 is of descriptive interest, there is little value in treating this full classification as a set of predictors. For our purposes here it will be useful to categorize respondents into three major classes:

Intact families (79%)
Families broken by death (8%)
Families broken by divorce and similar causes (13%)

Interpersonal Relationships with Parents

The broken home measure, like the other measures that have been described thus far, is a relatively simple description of an objective state of affairs—a boy either lives with both parents, or he does not because of death or other reasons. This dimension may have many subtle ramifications, but our measurement of the fact itself is entirely straightforward. Now we turn to a different level of conceptualization and measurement as we explore the interpersonal relationships between tenth-grade boys and their parents.

We set out to measure several dimensions of family relations using indexes based on questionnaire items. One index, termed parental control, can be disposed of quickly; in preliminary analyses this measure did not show any sort of relationship (linear or curvilinear) with criterion dimensions. The four remaining indexes deal with closeness to mother, closeness to father, parental consultation with son, and parental punitiveness; these indexes were moderately intercorrelated in preliminary analyses (absolute values of r ranged from .28 to .43), and they related in parallel ways to a number of criterion variables. Given this interrelation-

TABLE 2-5

RESIDENCE OF RESPONDENTS

Respondent Resides With:	Percent Respondents
Natural mother and father	79
Mother and stepfather	5
Father and stepmother	2
Stepmother and stepfather	-
Mother only	6
Father only	1
Mother and other(s)[a]	2
Father and other(s)[a]	-
Other, or missing data	4

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[a] Others in this cases are usually members of the extended family, such as grandparents.

ship, we explored the possibility of constructing a single general-purpose measure of family relations. Our rationale and approach were basically the same in this instance as in the development of our measure of SEL—it is a great deal simpler both theoretically and analytically if we can use a single dimension to capture most of the predictive power of its separate ingredients. Our conclusion was that a composite measure would indeed prove useful. The composite score was computed directly from the questionnaire items, as shown in Table 2-6.

The resulting scale of family relations was computed for 98 percent of all respondents (with the remaining 2 percent not available due to missing data). The scores were found to approximate a normal distribution. As an aid to later analyses, a bracketed version was developed by dividing the continuum of scores into eight categories.

The scale contains 10 items having to do with parental punitiveness, and 11 items having to do with closeness to parents and the feeling that parents are reasonable. The scale is thus fairly evenly balanced between positively-worded and negatively-worded items. The scoring of the negative items was reversed; accordingly, a high score indicates a predominance of favorable items. As we mentioned earlier, the measurement of family relations is much less straightforward than the measurement of other family background characteristics that have less emotional involvement for the respondent. The subjective impressions of respondents concerning matters in which they have a very large emotional stake are always suspect. There is much room here for subtle distortion and misinterpretation of response scales, and all of this can occur quite innocently and unintentionally. For these reasons, in our subsequent analyses we will find that questions of validity are focused particularly on the measure of family relations.

Family Religious and Political Values

Among the less tangible, but potentially important, aspects of family life is the ideology that is passed on to children. By intention or by accident, many values concerning religion and citizenship are passed on from one generation to another; accordingly, religious and political preferences are included among our measures of family background.

Religious Preference. One questionnaire item, clearly labelled "optional," asked each respondent to identify his own religious preference. The next question asked, "How about the rest of your family? Do they have the same church preference?" The over-

TABLE 2-6

A COMPOSITE MEASURE OF FAMILY RELATIONS

A total of 21 questionnaire items, listed below, were used to compute the measure of family relations. The total score on this scale consists of the mean of the scores for all available items, with up to five missing data cases allowed; in other words, a respondent had to provide answers to at least 16 of the 21 questions in order for a scale score to be computed. The scores for each response are indicated in parentheses; score values (ranging from 1 to 5) were assigned in such a way as to reduce distortion caused by missing data.

CLOSENESS TO FATHER	% Answering,[a] and Score Value (in parentheses)	
When you were growing up, how did you feel about how much affection you got from your father (or male guardian)?		
Wanted and got enough affection	60	(4)
Wanted slightly more than I received	18	(3)
Wanted more than I received	14	(2)
Did not want affection from him	5	(1)
How often do you and your father (or male guardian) do things together that you both enjoy--things like playing sports, or going to sporting events, or working on things together?		
Several times a week	19	(5)
About once a week	29	(4)
Once or twice a month	21	(3)
Less than once a month	22	(2)
How close do you feel to your father (or male guardian)?		
Extremely close	30	(5)
Quite close	35	(4)
Fairly close	19	(3)
Not very close	8	(2)
How much do you want to be like your father (or male guardian) when you're an adult?		
Very much like him	26	(5)
Somewhat like him	36	(4)
A little like him	18	(3)
Not very much like him	8	(2)
Not at all like him	6	(1)

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[a] Percentages do not add to 100 because missing data are not listed in this table. Missing data never exceeded 8%, and usually equalled 2% or 3%.

TABLE 2-6 (CONTINUED)

	% Answering, and Score Value (in parentheses)	
CLOSENESS TO MOTHER		
When you were growing up, how did you feel about how much affection you got from your mother (or female guardian)?		
Wanted and got enough affection	72	(4)
Wanted slightly more than I received	15	(3)
Wanted more than I received	7	(2)
Did not want affection from her	3	(1)
How close do you feel to your mother (or female guardian)?		
Extremely close	42	(5)
Quite close	37	(4)
Fairly close	15	(3)
Not very close	3	(2)
How much do you want to be like the kind of person your mother (or female guardian) is?		
Very much	20	(5)
Somewhat	38	(4)
A little	25	(3)
Not very much	9	(2)
Not at all	4	(1)
AMOUNT OF REASONING WITH SON		
How much influence do you feel you have in family decisions that affect you?		
A great deal of influence	19	(5)
Considerable influence	35	(4)
Moderate influence	26	(3)
Some influence	13	(2)
Little or no influence	6	(1)

Next we would like to get some idea of how often your parents (or guardians) do each of the following things:	Always	Often	Sometimes	Seldom	Never
Listen to your side of the argument.	18 (5)	30 (4)	32 (3)	13 (2)	5 (1)
Talk over important decisions with you.	12 (5)	32 (4)	34 (3)	14 (2)	5 (1)
Act fair and reasonable in what they ask of you. .	19 (5)	36 (4)	33 (3)	9 (2)	2 (1)

TABLE 2-6 (CONTINUED)

PARENTAL PUNITIVENESS Next we would like to get some idea of how often your parents (or guardians) do each of the following things:	% Answering, and Score Value (in parentheses) Always	 Often	 Sometimes	 Seldom	 Never
Completely ignore you after you've done something wrong	3 (1)	9 (2)	19 (3)	35 (4)	31 (5)
Act as if they don't care about you any more .	3 (1)	6 (2)	14 (3)	26 (4)	48 (5)
Disagree with each other when it comes to raising you	4 (1)	10 (2)	22 (3)	32 (4)	29 (5)
Actually slap you	2 (1)	7 (2)	19 (3)	31 (4)	39 (5)
Take away your privileges (TV, movies, dates).	3 (1)	9 (2)	25 (3)	35 (4)	26 (5)
Blame you or criticize you when you don't deserve it	3 (1)	13 (2)	32 (3)	36 (4)	15 (5)
Threaten to slap you	5 (1)	13 (2)	27 (3)	29 (4)	24 (5)
Yell, shout or scream at you	6 (1)	16 (2)	34 (3)	30 (4)	11 (5)
Disagree about punishing you	3 (1)	11 (2)	31 (3)	34 (4)	19 (5)
Nag at you	6 (1)	16 (2)	31 (3)	29 (4)	16 (5)

whelming majority indicated that the rest of the family have the same preference. Four percent checked the "no" response, but did not describe the differences in the space provided. Another 4 percent specified that some family member (father, mother, or sibling) held a different view. Only 2 percent clearly indicated that their personal religious viewpoint was inconsistent with the preference of the majority of family members, and in a number of these instances the differences lie within broad denominational categories (e.g., a boy describing himself as Episcopalian when the rest of his family is Presbyterian). Even if we include the 4 percent who indicated some difference without specifying its nature, there is only a very small group whose own religious views are not the same as the dominant family preference. The close agreement between our respondents' religious preferences and those of the rest of the family led us to adopt the respondent's religious preference as a suitable approximation for the family preference.[7]

TABLE 2-7

RESPONDENTS' RELIGIOUS PREFERENCES[a]

Religion	Percent of Respondents
Jewish	3
Roman Catholic, Eastern Orthodox	20
Baptist	22
Churches of Christ, Disciples of Christ, United Church of Christ	6
Lutheran	8
Methodist	14
Presbyterian	7
Episcopal	2
Other Protestant	4
Other and Missing Data	14

[a] The sequence of Protestant denominations is arbitrary, but not random. Except for the "Other Protestant" category, the denominations are arranged in order according to mean socioeconomic level (see Figure 3-3).

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[7] Since we did not have a separate question asking the dominant *family* religious viewpoint, we had little choice in reaching this conclusion. It would have been possible to exclude from analysis those individuals who indicated some difference from the family position, but the small number involved, and our uncertainty about which differences were important, led us to decide against this step.

After some exploration to determine the smallest set of categories that would capture most of the information in this complex dimension, the coding scheme shown in Table 2-7 was adopted.

Parents' Political Preference. A series of optional questionnaire items asked respondents to indicate their own political preference and that of each parent. Responses to these items are shown in the first three columns of Table 2.8. There is a strong association between boys' own political preferences and the preferences they reported for their parents; however, the correspondence is far from perfect. There is also considerable, but not complete, agreement between the political views reported for mothers and fathers. In view of this less than complete agreement, it seemed best to characterize *family* political preference by using a composite measure reflecting both parents' political views. Accordingly, it was decided that a boy's family would be characterized as "strongly Republican" if both parents were so described; the family would be "mildly Republican" if at least one parent were Republican (either mildly or strongly) and if the other parent were described as not having a conflicting preference (i.e., not "Democrat" or "Other"). In a parallel way a boy's family was labelled "strongly Democrat" only if both parents were in the "strongly Democrat" category, and "mildly Democrat" families were those in which at least one parent was Democrat and the other was not in disagreement. There were, of course, many

TABLE 2-8

POLITICAL PREFERENCES OF RESPONDENTS AND PARENTS

Political Preference (as reported by boys)	Percent Boys	Percent Fathers	Percent Mothers	"Family Preference"
Strongly Republican	9	11	10	7
Mildly Republican	14	14	16	16
Mildly Democrat	22	19	22	24
Strongly Democrat	15	20	17	14
Other (please write in)	4	3	3	39[a]
Don't Know	25	21	22	—
Missing Data	11	12	10	—

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[a] See text for description of this category.

other possible combinations; but the number of cases was often small, and the meaning of such combinations was unclear. Therefore, all families that could not be categorized as "strongly" or "mildly" Republican or Democrat were placed in a single "Other" class.[8]

Place of Residence

It is difficult at times to draw a clear distinction between family background and other background conditions. This problem is particularly troublesome when we deal with place of residence, since differences in community and region are mingled with family differences. Most troublesome for our study is the fact that systematic differences among schools are surely associated with different places of residence. Our present interest is in capturing the effects of family background, and insofar as it is possible we want to avoid contamination with school effects. We can achieve at best only partial success in this effort, and even this involves some degree of compromise and arbitrary decision.

We have several measures at our disposal relevant to our respondents' places of residence. We have coded the location of his school both in terms of broad region (Northeast, North Central, South, or West) and in terms of community size. We also have each respondent's report in the interview as to where he was brought up.

We felt that the measures of school location would be particularly likely to relate to possible school differences and school effects. Of course, not all regional differences between the boys can be simply attributed to the school system. It is not clear, for example, that regional differences in test scores are due to school system differences. But it is at least equally unclear that such differences are due to family background. We decided, therefore, that the geographic region of the boy's school was not appropriately included among our measures of family background; the one exception to this decision is discussed in the following section.

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[8] Most of the "Other" class was comprised of the 19 percent who specified "Don't Know" for both parents, plus the 10 percent who left this "Optional" item blank. There were relatively few cases of Democrat-Republican splits between parents. One percent of our respondents reported one parent strongly Democrat and the other strongly Republican; another 2 percent reported one parent strongly supporting one party while the other was a mild supporter of the opposite party; and 4 percent reported one parent mildly Republican and the other mildly Democrat.

Where the respondent was brought up seems more clearly appropriate as a family background measure. It is by no means free from the sort of contamination discussed above; however, it may have a good deal to do with family life, and on that basis we decided to include it. The following response categories were coded when young men were asked where they were brought up: on a farm (7%), in the country but not on a farm (16%), in a town (24%), in a small city (14%), and in a large city (39%).

Race as a Background Factor

It is not obvious that race ought to be considered as an aspect of background. In an ideal world skin color might be of no more importance in this sort of monograph than color of hair or eyes. But in the United States in the 1960's there are large differences between white and black families in levels of education, occupation, income, housing, and many other such characteristics. If these racial differences were not already abundantly documented, our first examination of our data would have been sufficient to make the case: black and white respondents in our sample do differ substantially in all these characteristics, and in criterion dimensions such as test scores, occupational aspiration, and the like (Bachman, 1968; Mednick, 1968).[9]

Despite the contemporary importance of racial differences and the confirmation of them provided in our own data, there was some question as to how best to deal with them in the study.

One possibility would have been to approach our study as an ideal opportunity to examine racial differences and some of their underlying social causes. Such differences appear in our data, and we will shortly see that some crucial environmental factors are related to them. It would be tempting to make rather broad generalizations from some of our findings concerning racial differences. However, our sample was not designed primarily for this purpose, and the number and distribution of black respondents is not adequate for it. Our overall sampling plan clustered respondents in 87 schools, thus facilitating the study of school effects and providing a reasonably accurate description of the total population of boys in tenth grade. The sample design is less well suited, however, to the description and comparison of small subsets of the population, particularly when the subset is located in a small number of schools. Only 256 of our 2213 respondents are black; more serious from a sampling standpoint is the fact that over two-thirds of them are concentrated in only nine of our sampled schools (with the remaining third scattered in 25 other schools). In short, our ability to generalize accurately from the black subsample is severely limited, and this argued against a strong concentration on racial differences.

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[9] The racial identification for each respondent was provided by the interviewer in a post-interview information sheet. The measure is thus observational, based on one person's perception.

Another possibility, therefore, would have been to limit our analysis and discussion to the 87 percent of respondents who are white. Such a solution is safe—it avoids one large complication in an already complex analysis and eliminates the risk of reporting findings that can be misunderstood or distorted—by ourselves or by others. An all-white analysis would, however, be a less than complete picture of tenth-grade boys and, even less acceptable, it would withhold information that is important, if not precise.

The remaining possibility was to examine racial differences in our sample with a clear understanding of their limitations. In adopting this approach we did not discard useful information, but bore in mind the limits of its usefulness. At the very least, our findings in this area may provide the basis for new hypotheses which can be tested more thoroughly with samples designed for that task.

Black Students in Integrated and Segregated Schools. More than two-thirds of our black respondents are in schools which are predominantly or entirely black; virtually all of our white respondents are students in schools which are predominantly or entirely white. Thus the different racial subgroups are served primarily by different schools, and a clear danger exists that much of what appears to be racial differences may in fact be the result of school differences. A preliminary exploration of this possibility was undertaken by Mednick (1968); when she matched 60 black students in integrated schools with an equal number of white students from the same schools, the differences in test scores between the two groups were only a third the size of the gross differences between all black and all white respondents in our study. The basic reason for this reduction in difference is not clear, because many things in addition to school were being matched in Mednick's analysis. But we certainly cannot overlook this possibility that the integrated schools in our sample are more effective as educational environments than the segregated schools.

Given the preliminary findings summarized above, we felt that the analysis of racial differences in our sample would have to deal separately with black students in segregated schools and those in integrated schools. We also found it necessary, for reasons discussed in Chapter 4, to distinguish between the five black segregated schools in the South and the four in the Northeast or North Central regions. Accordingly we will use the five-category classification presented in Table 2-9 whenever we examine racial differences among our 2213 respondents.

TABLE 2-9

RACIAL SUBGROUPS: FIVE-CATEGORY VARIABLE

	Respondents	Weighted Cases
White	1912 (86.4%)	2177 (86.6%)
Black in Integrated School[a]	73 (3.3%)	79 (3.1%)
Black in Northern Segregated School[a]	72 (3.3%)	72 (2.9%)
Black in Southern Segregated School[a]	111 (5.0%)	140 (5.6%)
Other	45 (2.0%)	46 (1.8%)

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[a] The decision about which schools should be termed black segregated was based on the distribution of percent of white students in our schools. A "natural" break in the distribution permitted us to draw the line in such a way that none of the nine "segregated" schools has more than ten percent whites, while none of the "integrated" schools has fewer than forty percent whites (and most are predominantly white).

A Note on the Selection and Construction of Background Measures

We have mentioned preliminary analyses that were used to check on the usefulness of some measures. We set out to examine family background with the idea clearly in mind that some measures would prove more reliable, valid, and useful than others. We have chosen in this monograph to concentrate upon those background dimensions which show promise of being *predictively useful* in our study. We do not assert that these are the only "true" representations of socioeconomic level, family relations, and the like. Likewise, we do not assert that aspects of family background omitted from this chapter are of no value. Some we did not try to measure; others we did not measure well, or for other reasons they did not add to our ability to explain variation in our criterion dimensions. The pattern of relationships we report reflects the idiosyncrasies of our sample, and another sample would be expected to show some differences in *relationships* as well as in descriptive levels of each dimension measured. But this, in our opinion, is inherent in sampling; the effect of our preliminary analyses is only to exclude unsuccessful measures from presentation. There is no implication of flawless selection and prediction.

Summary

This chapter describes a set of general dimensions designed to capture much of what is important—and measurable—in the family background of adolescent boys. The following eight dimensions have been selected for analysis:

1. *Socioeconomic level* (SEL), a composite measure made up of father's occupational status, parents' education, and family possessions.

2. *Number of siblings*, an eight-point scale ranging from zero to seven or more.

3. *Broken home*, a three-way classification indicating whether a respondent's family is intact, broken by death, or broken by divorce or similar causes.

4. *Family relations*, an index of 21 items dealing with relationships between respondents and their parents.

5. *Religious preference*, a categorization of the respondent's religious preference.

6. *Parents' political preference*, a derived measure which combines parents' preferences into five categories: strongly Republican, mildly Republican, mildly Democrat, strongly Democrat and other.

7. *Community size*, the respondent's report of whether he was brought up on a farm, in the country but not on a farm, in a town, in a small city, or in a large city.

8. *Race*, a classification of respondents as follows: all whites, blacks in integrated schools, blacks in northern segregated schools, blacks in southern segregated schools, all others.

In addition to presenting the dimensions of family background, this chapter has indicated how our sample of respondents is distributed along each scale. We have not yet considered the extent to which these background dimensions are interrelated. We turn our attention to this matter in the next chapter.

Chapter 3

INTERRELATIONSHIPS AMONG BACKGROUND CHARACTERISTICS

Background characteristics do not operate in isolation—they are interrelated. In our sample, if a boy states that his religious preference is Jewish, it is very likely that his family socioeconomic level is above average, that he has only one or two siblings, and that he was brought up in a city or suburb. To take another example, those in our sample who are black and who go to segregated schools in the South are far below the average socioeconomic level, have a relatively large number of siblings, and are predominantly Methodist or Baptist. These findings are not new or surprising; they simply illustrate the point that family background characteristics tend to be interrelated. We have already taken some account of the close association between parents' education, father's occupation, and possessions in the home—all these ingredients have been combined in the measure of socioeconomic level (SEL) described in Chapter 2. In this chapter we turn our attention to interrelationships among SEL and other major dimensions of family background.

The form of analysis presented in this chapter is straightforward. As a preliminary step, bivariate (two-way) frequency tables were produced for each pairing of our eight background variables; the 28 resulting tables are presented in Appendix C. After an inspection of the tables, a number of one-way analyses of variance were carried out. The results of these analyses are presented in the figures that follow.[1]

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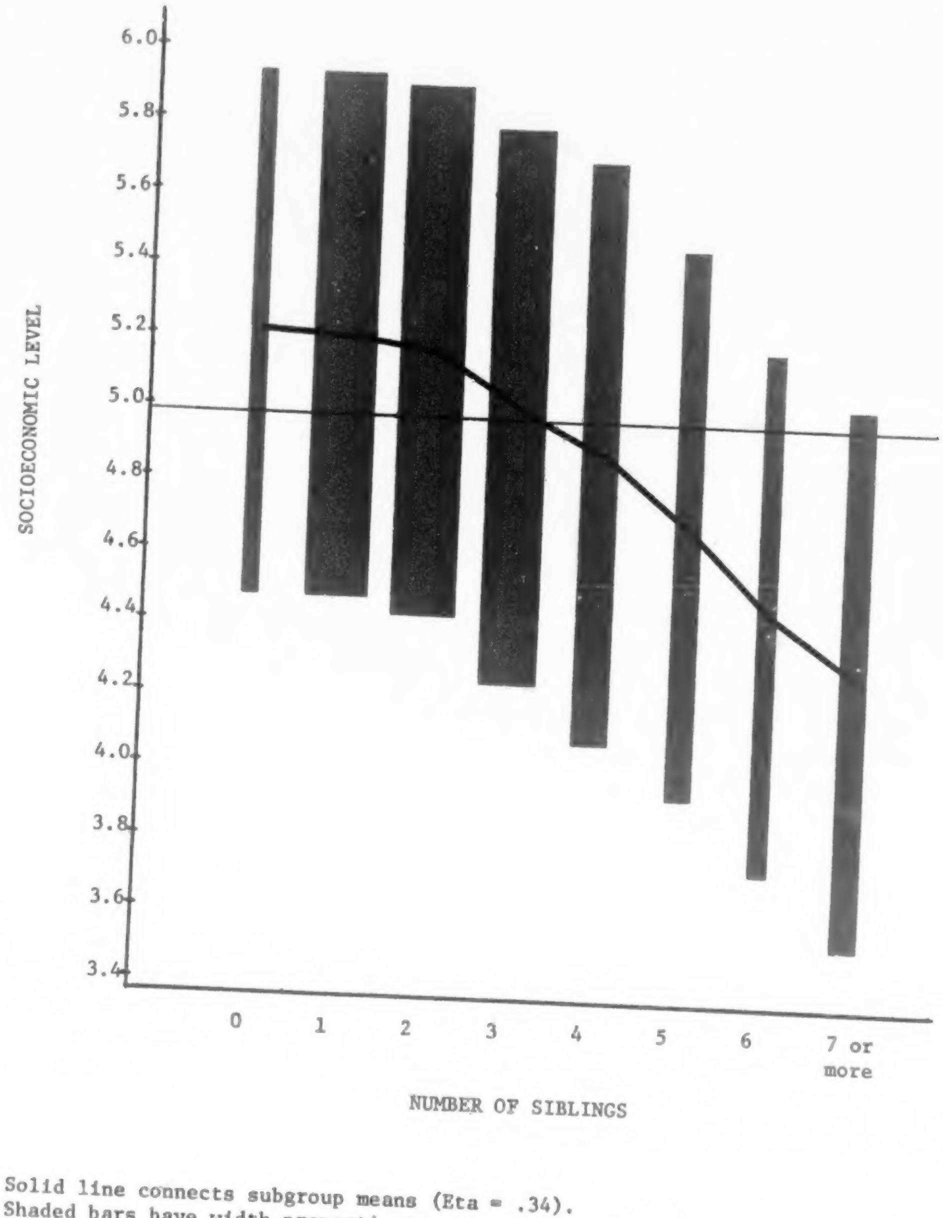
[1] The one-way analysis of variance produces several useful statistics: 1) It provides means and standard deviations for one variable (Y) within each category of another variable (X). 2) It provides the statistics Eta and Eta^2. "Eta is the correlation ratio and indicates the ability of the predictor using the categories given to explain variation in the dependent variable. Eta^2 indicates the proportion of the total sum of squares explainable by the predictor." (Andrews, et al., 1967).

FIGURE 3-1

SOCIOECONOMIC LEVEL RELATED TO FAMILY SIZE



Solid line connects subgroup means (Eta = .34).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.

Note: This figure follows a standard format that will reappear in later chapters. A discussion of this format and the rationale for using shaded bars in the background are presented in Appendix E. The reader may wish to examine that appendix briefly before proceding further.

Socioeconomic Level and Family Size

Family size gets steadily smaller as we go from low to high socioeconomic levels. However, the association between family size and SEL is not a simple straight line, as the data presented in Figure 3-1 indicate. About half of our respondents have two or fewer siblings, and within this range there is no association between family size and SEL. As the number of siblings reaches three and increases up to seven or more, there is a steady decrease in mean SEL.

It may occur to the reader, as it did to us, that any apparent predictive value of family size may in fact be nothing more than a reflection of that variable's close association with SEL. As we will document in later chapters, this turns to be not entirely true. While SEL and number of siblings are indeed related, they are also sufficiently different to make it quite worthwhile to retain number of siblings as a separate characteristic of family background.

Broken Home Related to Socioeconomic Level and Family Size

One might well expect that the socioeconomic level of broken homes would be lower than that of intact homes. As Figure 3-2 indicates, this is true of homes that are broken due to divorce or separation. We cannot say with any certainty whether divorce "causes" lower SEL to a greater degree than low SEL "causes" divorce. But while homes broken by divorce or separation are relatively low in SEL, those broken by death are not.

The likelihood of a broken home is related also to family size. Respondents with no siblings are relatively more likely to come from families broken by death or divorce. Except for this category, however, there is a positive relationship between family size and divorce—the more siblings a boy has the more likely it is that his parents are divorced or separated. As we might expect, there is no parallel relationship between family size and death of parents.[2]

In summary, it is important to maintain the distinction between homes broken by death and those broken by divorce or separation. With relatively few exceptions, homes broken by death are not very different from intact families in terms of socioeconomic level or number of siblings. On the other hand, divorce or separation tends to appear more often in families that are large and which are low in socioeconomic level.

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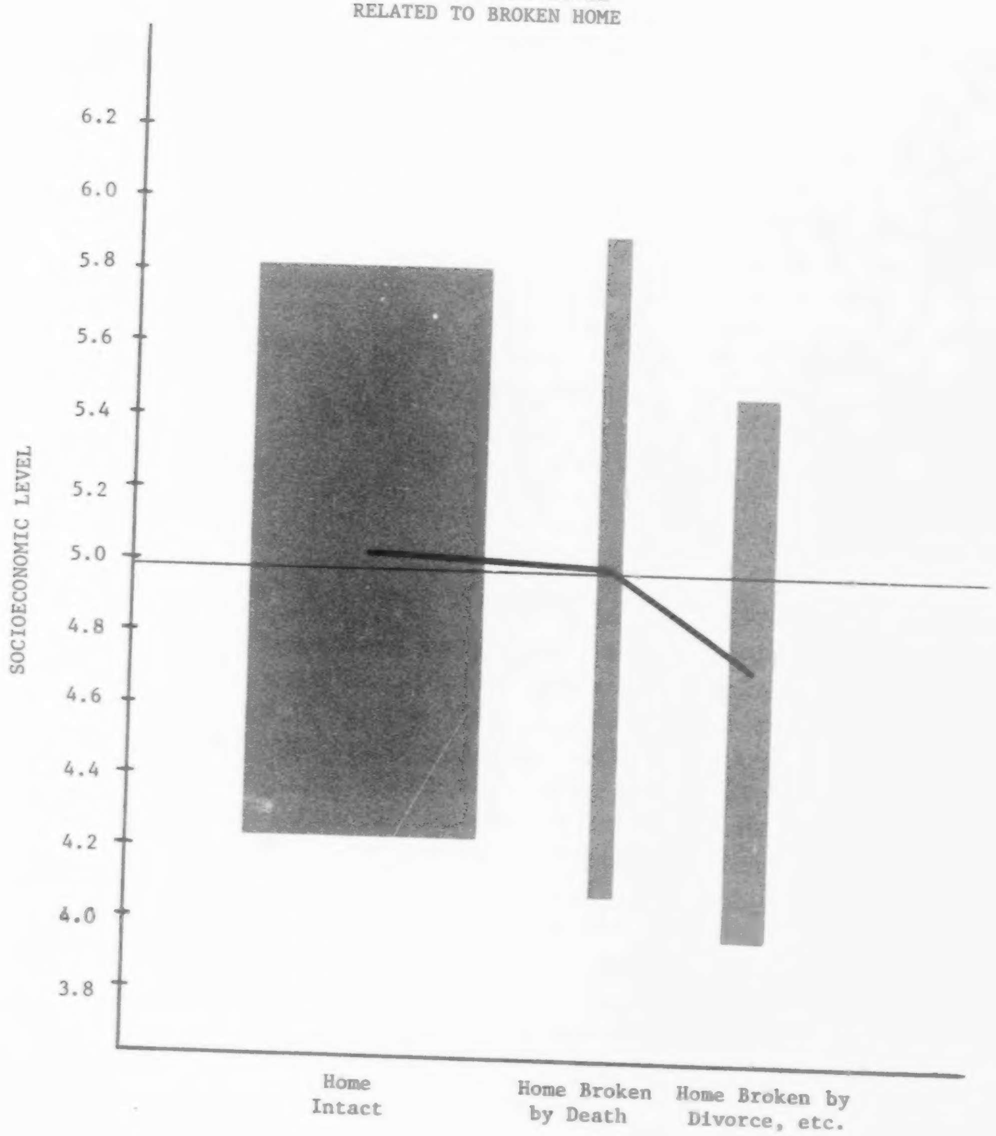
[2] The data relating broken home to family size are presented as a part of Appendix C.

FIGURE 3-2

SOCIOECONOMIC LEVEL
RELATED TO BROKEN HOME



BROKEN HOME

Solid line connects subgroup means (Eta = .13).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.

See Appendix E for further information and for data underlying figures.

NOTE: The line connecting categories is not meant to imply any sort of broken home continuum. The reasons for using "profile" lines in all figures are not [illegible] in Appendix E.

Family Relations Versus Other Background Factors

Do the family characteristics reviewed thus far have any implication for interpersonal relationships—particularly relationships with parents? It does appear that our measure of family relations is associated with other family characteristics, although the relationships are not strong. There is a small but steady increase in positive family relations as SEL increases from the lowest to highest category; the higher the SEL, the more positive the family relations (Eta = .12).[3]

When it comes to family size, those boys with no siblings or one sibling get along best with their parents; as the number of siblings increases beyond one, there is a gradual decrease in the quality of family relations (Eta = .13).

Boys report poorer than average relationships between themselves and their parents in homes broken by divorce or separation. This finding by itself may not be surprising—after all, family relationships are likely to be different if one parent (usually the father in our sample) is missing. Indeed, the basis for computing the family relations measure is altered slightly if the "closeness to father" items are missing from the index score. What is surprising is the fact that along this dimension there is no systematic difference between boys who have lost a parent by death and those whose families are intact.[4]

Background Correlates of Religious Preference

Figure 3-3 presents mean family socioeconomic level for each category of a respondent's religious preference. Mean SEL is high for the small subgroup of Jewish respondents (N = 59), about average for Catholics, and also about average for those in the missing data category. Protestant denominations cover a wide range of socioeconomic levels. Baptists have a mean SEL which is about half a standard deviation below the sample mean. Church of Christ, Lutheran, Methodist, and Presbyterian denominations range (respectively) from slightly below to somewhat above the mean SEL for the total sample. Episcopalian respondents (N = 51) show the highest mean SEL of any religious subgroup—nearly a full standard deviation above the sample mean.

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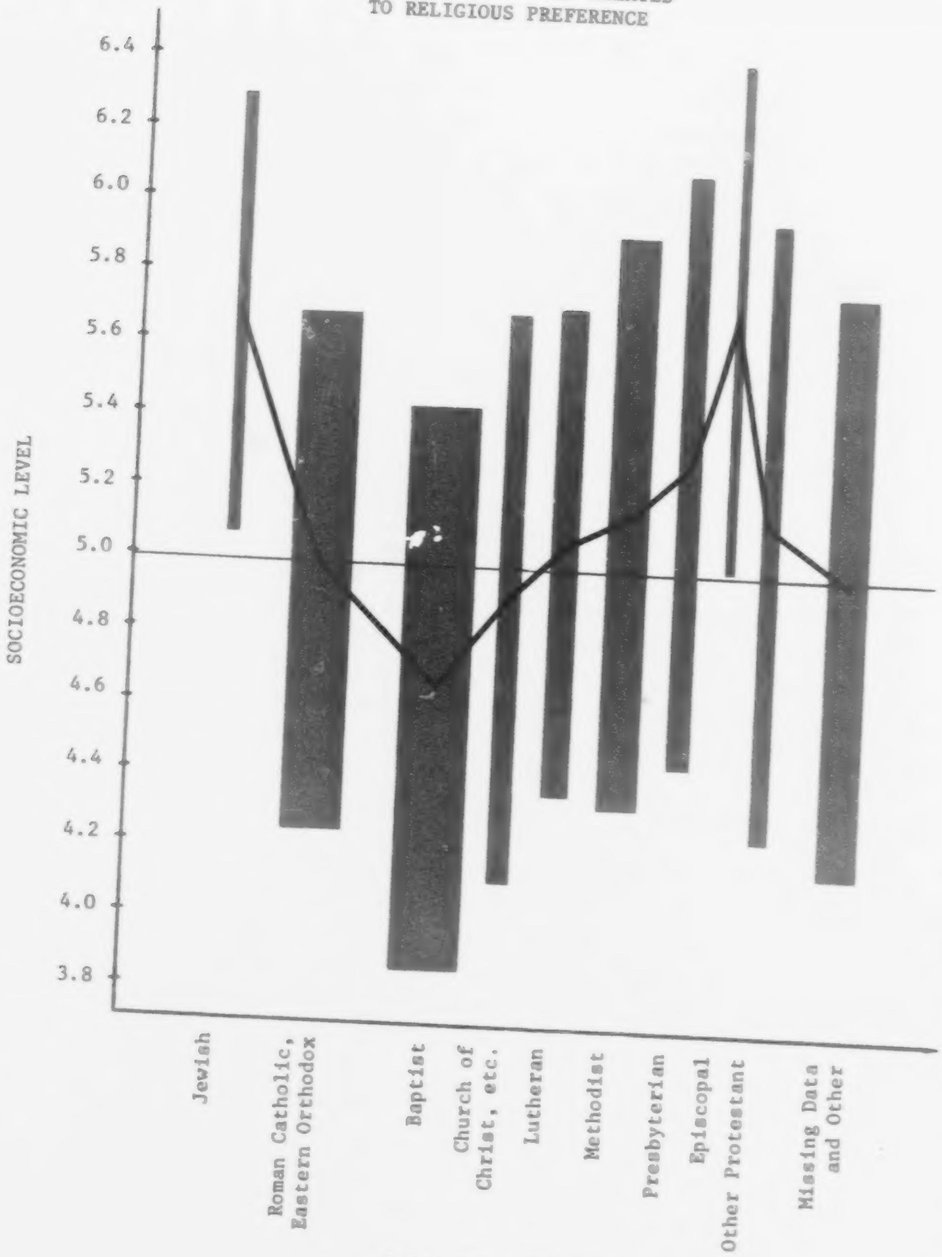
[3] Eta is the correlation ratio we report when *categorical* predictors are used. It can be interpreted as similar to the product-moment correlation, *r*, except that Eta is not restricted to linear relationships and Eta never takes a negative value (even when the relationship is inverse).

[4] The data relating broken home to family relations are presented as a part of Appendix C.

FIGURE 3-3

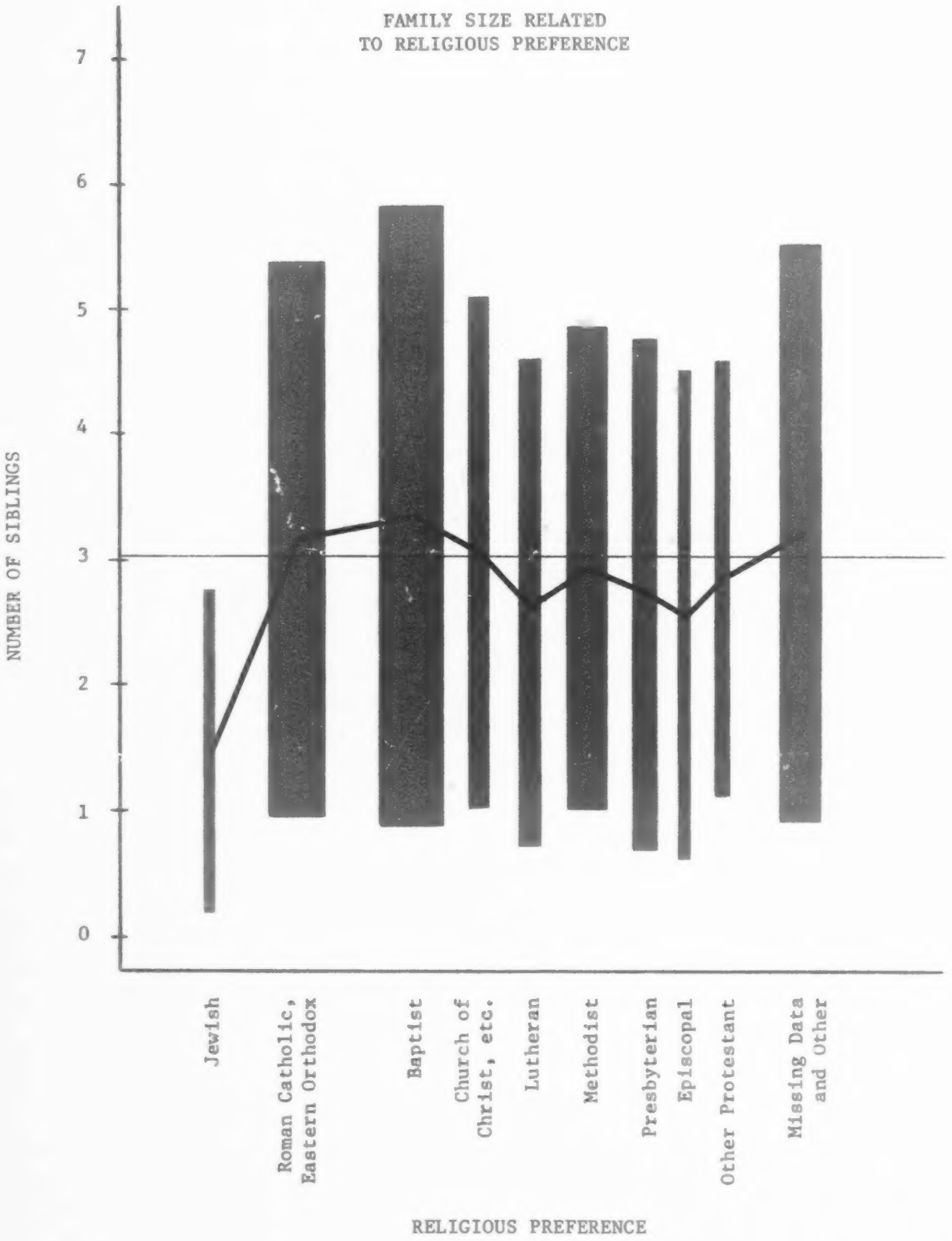
SOCIOECONOMIC LEVEL RELATED TO RELIGIOUS PREFERENCE



Solid line connects subgroup means (Eta = .31).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 3-4

FAMILY SIZE RELATED
TO RELIGIOUS PREFERENCE



Solid line connects subgroup means (Eta = .16).

Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.

See Appendix E for further information and for data underlying figures.

Religious preference is related to family size in Figure 3-4. The Jewish subgroup departs most clearly from the total sample, with respondents reporting an average of 1.5 siblings. Catholics in our sample are just about equal to the total sample with an average of 3.2 siblings. Average numbers of siblings for the Protestant denominations range from 3.3 for Baptists to 2.5 for Episcopalians.

The frequency of broken homes due to divorce or separation is 12.6 percent for the total sample. This percentage varies somewhat from one religious subgroup to another, but the differences are rather small on the whole. The one exception is the subgroup of Jewish respondents; only one out of the 59 reported his family broken by divorce.

Background Correlates of Political Preference

Figure 3-5 shows the relationship of family political preference to socioeconomic level. Republican families are slightly above average in SEL. Republican families also have fewer children and are a bit less likely to have been disrupted by divorce; however, these differences are very small indeed.

Political preferences in our sample do differ according to religion. The great majority of Jewish and Catholic families that can be classified on the Democrat-Republican scale are Democrats. Among Protestants the proportions of Democrats and Republicans shift in a way that corresponds to differences in socioeconomic level; Baptists are more often Democrats than Republicans, but with Episcopalians the reverse is clearly the case—Republicans outnumber Democrats.

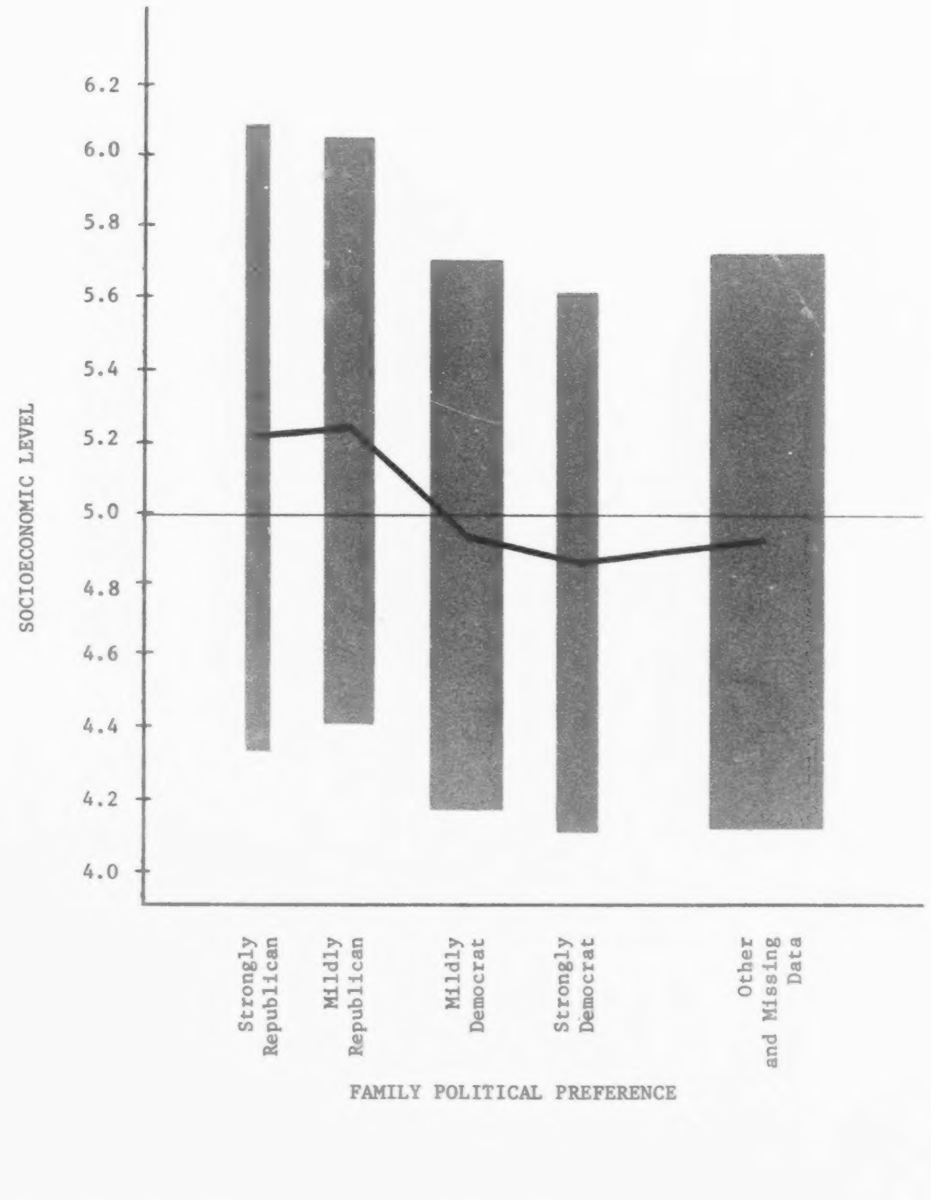
One other background factor we found related to political preference is race. As we shall see below, an overwhelming proportion of the black families in our sample are Democrats rather than Republicans.

Community Size Related to Other Background Factors

Figure 3-6 relates socioeconomic level to respondents' reports of the size of the community in which they were raised. Being raised on a farm is associated with the lowest mean SEL, and the next lowest mean SEL is found for those respondents who were brought up in the country but not on a farm. A parallel relationship appears between number of siblings and community size; those raised on farms report the largest families, and those brought up in the country report the next largest families.

FIGURE 3-5

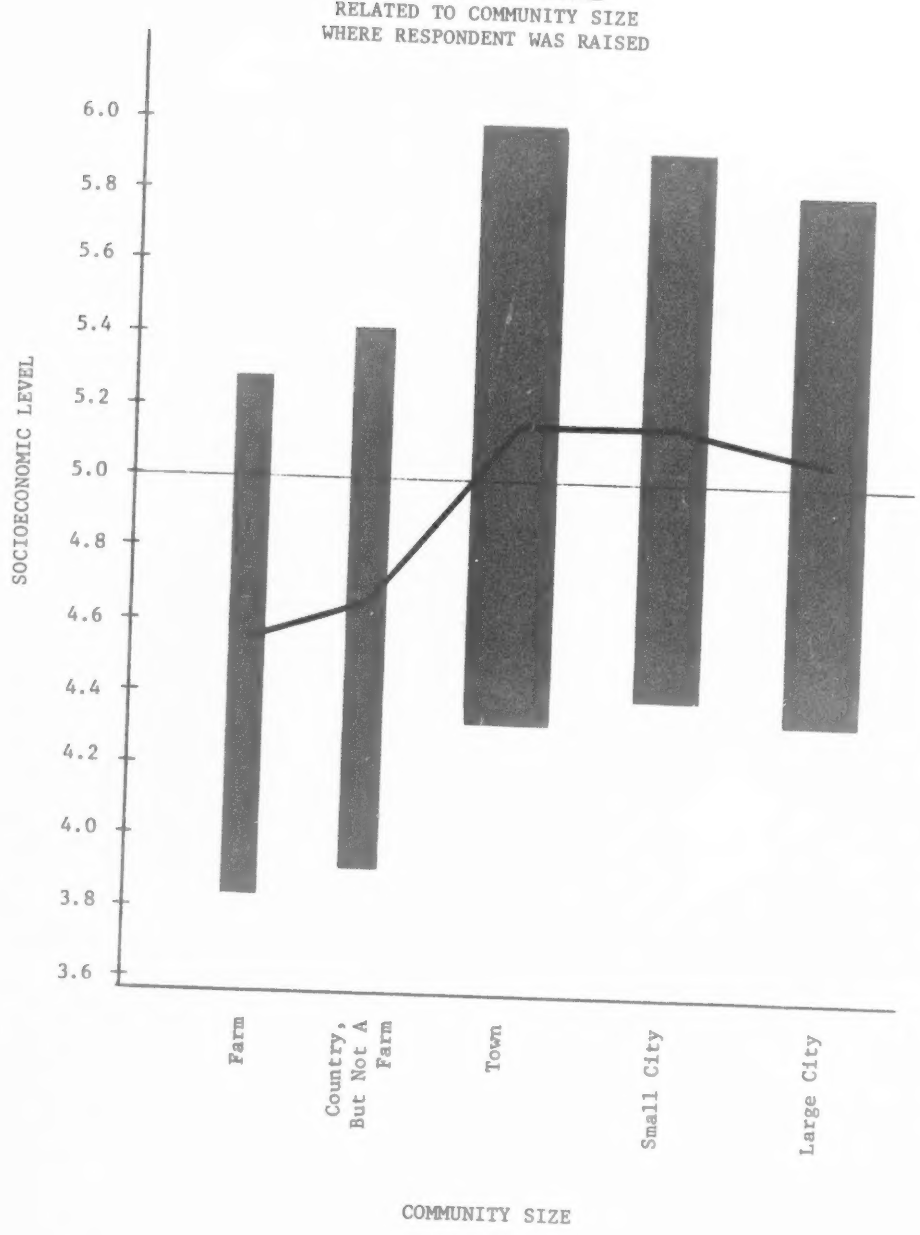
SOCIOECONOMIC LEVEL RELATED TO FAMILY POLITICAL PREFERENCE



Solid line connects subgroup means (Eta = .17).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 3-6

SOCIOECONOMIC LEVEL RELATED TO COMMUNITY SIZE WHERE RESPONDENT WAS RAISED



Solid line connects subgroup means (Eta = .28).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

Racial Differences in Family Background

We argued in the last chapter that black respondents in our sample must be considered in several distinct categories that relate to different school experiences. We also stressed the limitations in generalizing from our small sample of black respondents. With both these considerations in mind, let us examine some of the background differences related to our five-category race variable.

As Figure 3-7 indicates, the socioeconomic level of southern blacks in segregated schools (N = 111) is far below that of the whites. Blacks in integrated schools (N = 73) and those in northern segregated schools (N = 72) are identical in average SEL; their level is lower than that of whites, but it is much higher than the SEL for blacks in southern segregated schools. The SEL for our handful of subjects in other racial minorities is also low; they are not on the average as poor as the southern segregated blacks, but they are less well off than other blacks.

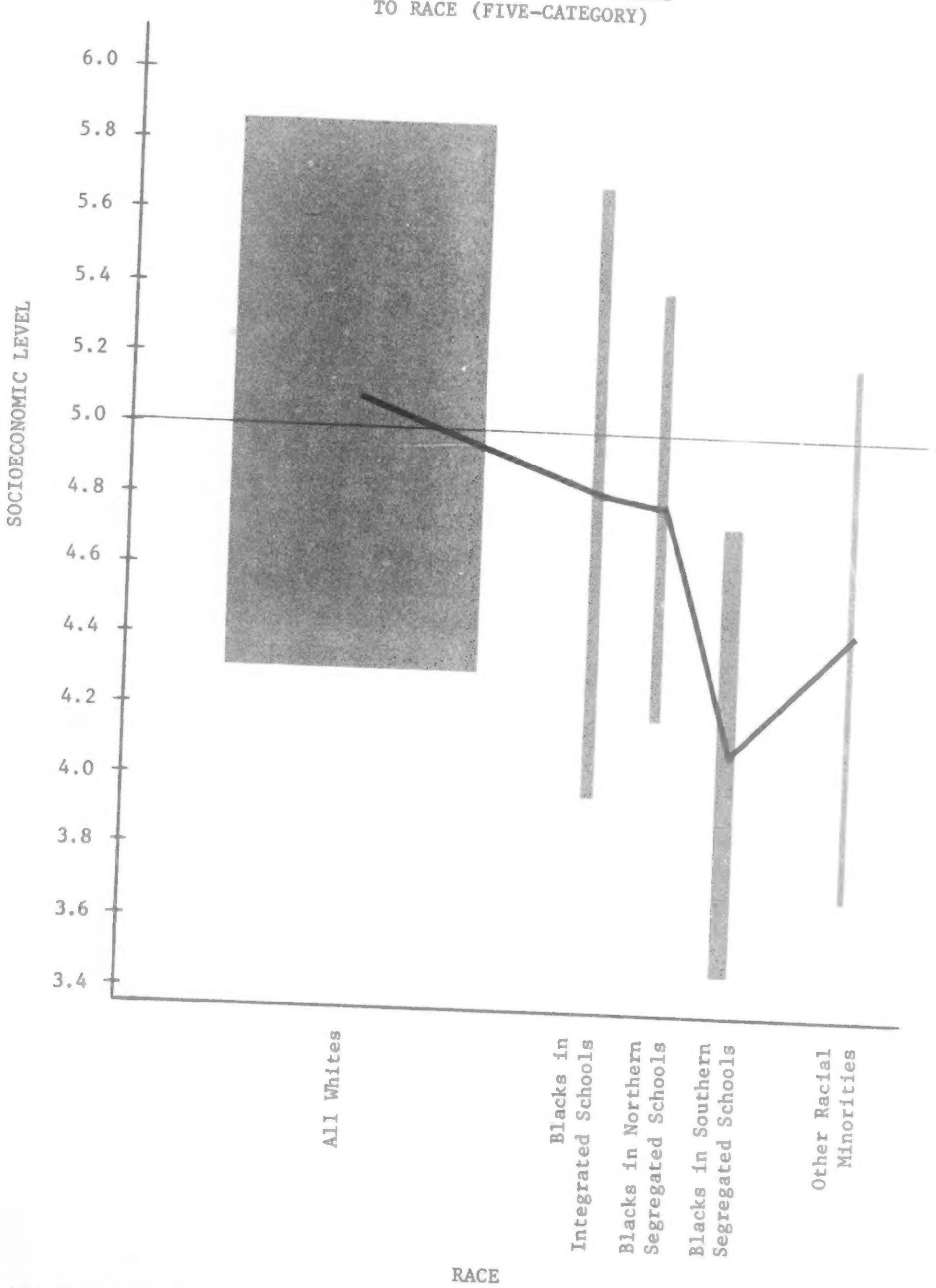
Family size for racial subgroups is shown in Figure 3-8. Whites have the smallest families on the average, while blacks in southern segregated schools have the largest numbers of siblings. The pattern in Figure 3-7 (SEL and race) shows a strong inverse relationship with that in Figure 3-8 (family size and race). This is scarcely surprising when we recall the inverse relationship between sibship size and SEL. At a more detailed level, however, there are some interesting differences between racial patterns for SEL and those for family size. In terms of SEL, blacks in the North and/or in integrated schools are much more similar to whites than to southern segregated blacks. On the other hand, the family size of integrated blacks is about midway between that of whites and that of segregated blacks, and segregated blacks in the North are not very different in family size from their southern counterparts.

The frequency of broken homes due to divorce shows a trend similar to the findings for family size. While 10 percent of the white respondents report that they are not living with both natural parents due to divorce or separation, the corresponding percentages are 23 for integrated blacks, 29 percent for segregated blacks in the North, and 33 percent for segregated blacks in the South.

Family relations reported by respondents are very similar for all racial subgroups. Major racial differences in religious and political preferences can be summarized briefly. Well over half of all black respondents who express a religious preference are Baptists—a proportion that is roughly the same for the several

FIGURE 3-7

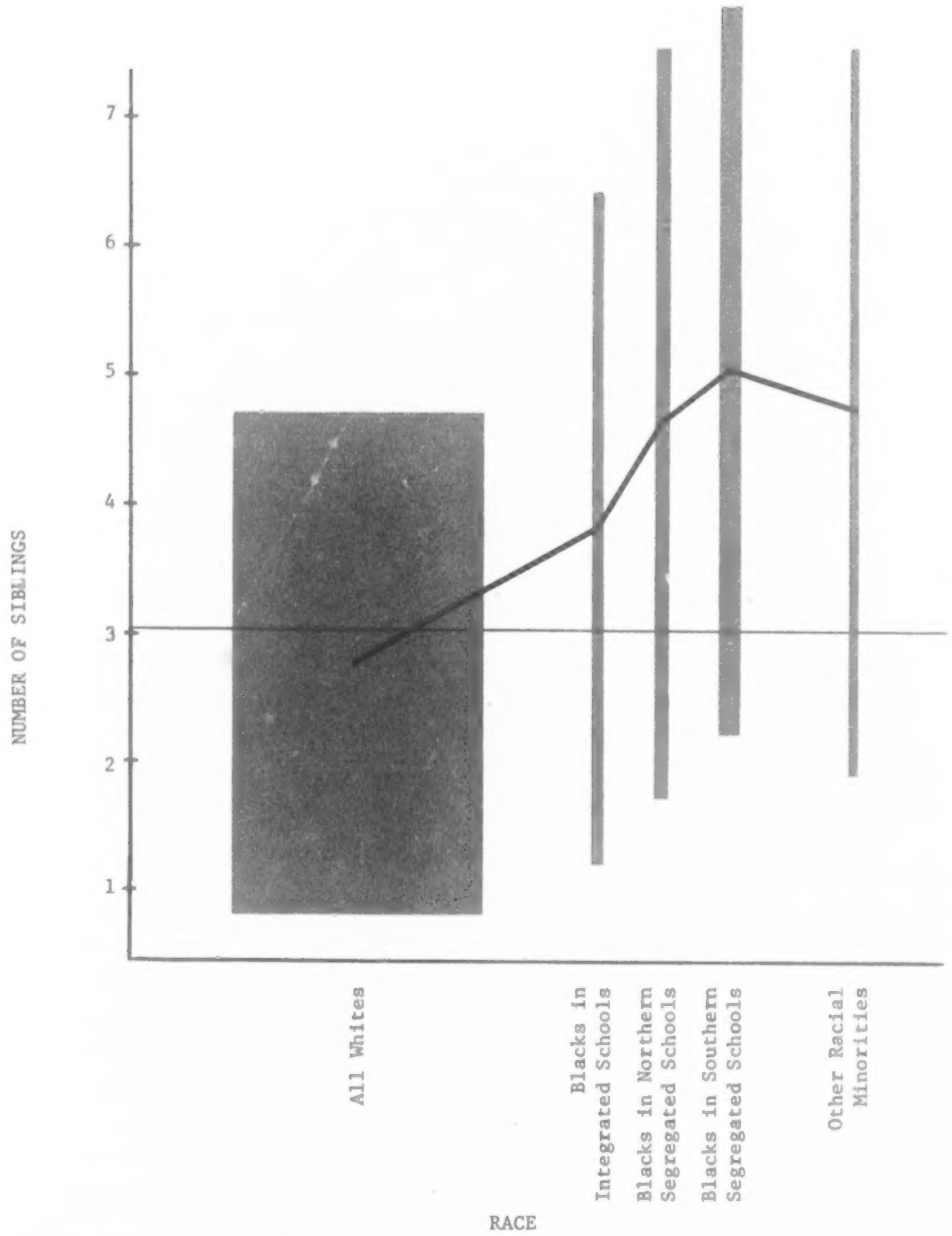
SOCIOECONOMIC LEVEL RELATED
TO RACE (FIVE-CATEGORY)



Solid line connects subgroup means (Eta = .30).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 3-8

FAMILY SIZE RELATED TO
RACE (FIVE-CATEGORY)



Solid line connects subgroup means (Eta = .30).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

subgroups of blacks. The proportion of Baptists among whites is about 20 percent. Family political preference is overwhelmingly Democrat among black families; the Democratic Party is preferred over the Republican Party on a 10-to-1 basis by those in northern and/or integrated schools, whereas for those in southern segregated schools the ratio is 2-to-1. The Democratic Party is also dominant in white family preferences, but in this case the edge over the Republican Party is only 3-to-2.[5]

The data concerning community size are extremely unreliable, since most of our black respondents are clustered in a handful of locations (corresponding to a handful of segregated schools). It may be useful to note that *in our sample* the rural-urban distribution of integrated blacks is roughly the same as that for whites, with a few less blacks on farms and a few more in large cities. Two-thirds of the northern segregated blacks in our sample were raised in large cities, with practically none raised on farms or in the country. Roughly one-third of the southern segregated blacks in our sample were raised on farms or in the country, another third in towns or small cities, and the remaining third in large cities.

These findings clearly confirm that differences in race are associated with a number of other background differences. It is also clear that black respondents in several categories of school experience are different from each other in a number of important ways. Perhaps most striking are the differences in socioeconomic level when black students in southern segregated schools are compared with all other blacks.

Summary

In some ways this chapter has been a demonstration of the obvious fact that background factors are interrelated. Large families and lower socioeconomic level tend to go hand in hand--at least when the total number of children exceeds three. Disruption due to divorce or separation is relatively more frequent in large families and those low in SEL, but the same relationships do not appear for disruption due to the death of a parent. Family interpersonal relationships are slightly better in small families and those high in SEL; relationships are poorer in homes broken by divorce. Relatively high SEL is associated with Republican families, and with those having certain religious preferences (Jewish, Presbyterian, Lutheran, Episcopal). Families of respondents raised on farms are larger and are relatively low in socioeconomic level. Finally, black respondents are lower than whites in SEL, have more siblings, and are more likely to have experienced a home broken by divorce or separation. These relationships, while true for blacks in general, tend to be particularly strong when we focus on those who are students in southern segregated schools.

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[5] The ratios given here are based upon only that subset of the respondents (about 65%) who answered the relevant items in such a way as to be categorized on our family political preference variable (see Chapter 2, page 23).

The analyses in this chapter have revealed that interrelationships among background factors are quite complex. This suggests the need for multivariate techniques in predicting to criterion dimensions from these family background characteristics. We turn our attention to this problem in the next chapter.

Chapter 4

INTELLECTUAL APTITUDES AND ABILITIES

Intelligence is among the most troublesome concepts used by social scientists today. Part of the trouble arises from a lack of general agreement as to exactly what intelligence means. How do we define it? Is intelligence understood as merely that which an intelligence test measures—an operational definition? Or does the concept of intelligence reach further to tap some underlying trait in man that is only partially captured by any particular test at a given point in time? Is it better to treat intelligence as one general concept or as a number of distinct components?

Even if we could agree about what we mean by intelligence, questions would remain about its causes. To what extent is intelligence (or perhaps performance on a particular intelligence test) a function of inheritance, and to what extent is it shaped by environmental exposure? It seems clear that advantages of inheritance go hand in hand with advantages in environment—the offspring of highly educated parents are likely to display above average intelligence because of both nature and nurture. Thus anything short of experimental manipulation will leave heredity and environment confounded.

These problems are serious, but they are by no means unique to the concept of intelligence. The definition and measurement of many other personality dimensions treated in this monograph are equally problematic. Why then is there an unusual amount of sensitivity attached to the treatment of intelligence? Perhaps because of its importance—not only for social scientists but for the general public. Intelligence, and tests of intellectual ability, are given great emphasis in a person's life, particularly as a basis for entry into jobs and access to higher education. In fact, many critics have argued that these tests receive far too much emphasis and their use in education and business is excessive and harmful.

Controversy concerning intelligence and testing is particularly acute when issues of racial differences and discrimination are involved. The interpretations and judgments underlying our own treatment of data relevant to these matters are well summarized by the following quotation:

> The evidence of four decades of research on this problem [the relationship of race to intelligence] can be readily summarized. There are marked differences in intelligence test scores when one compares a random sample of whites and Negroes. What is equally clear is that little definitive evidence exists that leads to the conclusion that such differences are innate. The evidence points overwhelmingly to the fact that when one compares Negroes and whites of comparable cultural and educational background, differences in intelligence test scores diminish markedly; the more comparable the background, the less the difference. . .
>
> Social inequalities deprive large numbers of black people of social, economic, and educational advantages available to a great majority of the white population. The existing social structures prevent black and white people even of the same social class from leading comparable lives. In light of these conditions, it is obvious that no scientific discussion of racial differences can exclude an examination of political, historic, economic, and psychological factors which are inextricably related to racial differences. . . (SPSSI Council, 1969).

Measures of Intellectual Aptitude and Ability[1]

A number of measures of intellectual ability were included in our data collection. The complete battery of tests and the rationale underlying their selection are presented elsewhere (Bachman, et al., 1967); a brief summary of the measures will be adequate for present purposes.[2]

Quick Test of Intelligence (QT). The Ammons Quick Test is a brief, individually administered test designed to measure general intelligence (Ammons and Ammons, 1962). The Quick Test has three forms, all of which were given at the end of the interview (administration time for all three forms ranged from six to ten minutes). Each form consists of a list of fifty words ordered according to increasing difficulty, accompanied by a stimulus plate on which there are four line drawings. The test administrator

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[1] All test scores are, of course, measures of *abilities* existing at the time that the respondents took the tests. However, the same scores can also be viewed as measures of *aptitude*—especially scholastic aptitude. Accordingly, we do not classify our measures as exclusively aptitude or ability measures—they are in fact both, and we find it most useful to treat them that way.

[2] Dr. Martha T. Mednick selected this battery of tests. Her analyses of test data (cited below) and her suggestions have contributed importantly to the present chapter.

(interviewer) reads each word to the respondent, who answers by pointing to one of the four pictures. For example, the word "building" would lead the respondent to point to a picture which included a house, or the word "disaster" might involve pointing to a picture of an auto accident. An item cardboard which lists all fifty items is handed to the respondent so that he may read along as the interviewer presents the items; it is not necessary, however, that the respondent be able to read the stimulus words.

The Quick Test seemed well-suited to our purposes for several reasons. As noted above, it does not require reading ability or a written response. It is individually administered, thus avoiding some of the problems that can occur in group-administered tests. Finally, it is practical for administration by interviewers with no previous experience in test administration.

Gates Test of Reading Comprehension. A portion of the Gates Reading Survey (1958) was included in the group-administered test battery as a measure of reading achievement. The test consists of 21 short passages arranged in order of increasing difficulty. The respondent's task is to insert two or three words into each passage, selecting each insertion from a list of five possibilities. A total of 20 minutes was allowed, which proved to be more than adequate for nearly all respondents.

General Aptitude Test Battery—Part J: Vocabulary (GATB-J). This test is part of the well standardized multifactor test battery developed by the United States Employment Service for vocational counseling (Super, 1957). The vocabulary test consists of 60 sets of four words each. Each set of words includes two which have either the same meaning or opposite meanings; the respondent is required to pick the correct pair from each set of four. The total time permitted was five minutes; since many respondents did not finish in this period, speed must be considered one of the components of successful performance in this test.

A Note on "Culture-fair" Measures of Intellectual Ability. The battery included a number of tests in addition to those described above. It was intended to cover a range from tests which are strictly measures of educational outcome to those which are

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[3] The original Quick Test Manual (Ammons and Ammons, 1962) provides norms for converting raw scores into IQ scores. The IQ conversion has the advantage of correcting a slight skewness in raw scores (a "ceiling effect"). However, such norms are subject to change; at least one such modification has already taken place for the Quick Test (Ammons and Ammons, 1966). In the present volume, the Quick Test data used are raw scores (i.e., number of correct answers).

least dependent on schooling (Bachman, et al., 1967, pp. 64-66). Among those considered less dependent on schooling (and thus more culture-fair) was a five-minute test made up of matrix items similar to those in Raven's Progressive Matrices Test (1951). As Mednick (1967, 1969) has reported, scores on this matrices test are highly correlated with those on the more conventional tests of intellectual ability. More important, Mednick (1968) concluded that this test turned out to be just as sensitive to culture variables (i.e., just as "culture-unfair") as did our other tests. In short, our preliminary investigations indicated that our efforts to obtain a culture-fair test were not successful.

A Measure of Job Information. At the time our test battery was developed, we were unable to discover any standardized test of job information or occupational information. We consider such knowledge to be an important factor in occupational and educational decisions and undertook to develop a brief test of job information. The test consists of 25 items, of the true-false and multiple-choice types, dealing with what it is like to be in an occupation (e.g., income, status, and working hours), and also with the requirements for entering an occupation (e.g., educational ability).[4]

By definition one's level of job information is neither an intellectual aptitude nor ability. Nevertheless, the actual measure of job information turns out to be so highly related to our measures of intellectual ability that we must question whether the job information test measures anything independent of general intelligence.

Interrelationships Among Measures of Intellectual Ability. Scores on the four tests mentioned above are highly intercorrelated, as shown in Table 4-1. In particular, the Quick Test, the GATB-J Vocabulary test, and the Gates reading test are very closely related. Mednick (1969) has reported relationships between each of these test scores and a number of other dimensions; the patterns of correlations are highly similar. It seems likely then that the combination of family background factors that predicts to one of these tests will be quite similar to that for the other tests. We will concentrate much of our attention in this chapter on the Quick Test; later we will note the similarity of findings for the other three tests.

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[4] Shortly after our test of job information had been developed and administered, we discovered that a parallel effect had been carried out during the same period by Herbert S. Parnes and his associates at the Center for Human Resource Research at the Ohio State University. A description of Parnes' Occupational Information Test and a report of some of its correlates are presented by Parnes et al., (1969).

TABLE 4-1

INTERRELATIONSHIPS AMONG MEASURES OF INTELLECTUAL ABILITY

Test	Mean	Standard Deviation	Product-Moment Correlation 1.	2.	3.
1. Quick Test	108.5	12.5			
2. GATB-J Vocabulary	18.9	6.6	.68		
3. Gates Reading	36.0	6.2	.66	.71	
4. Job Information Test	16.7	3.4	.56	.57	.60

Background Factors Related to the Quick Test

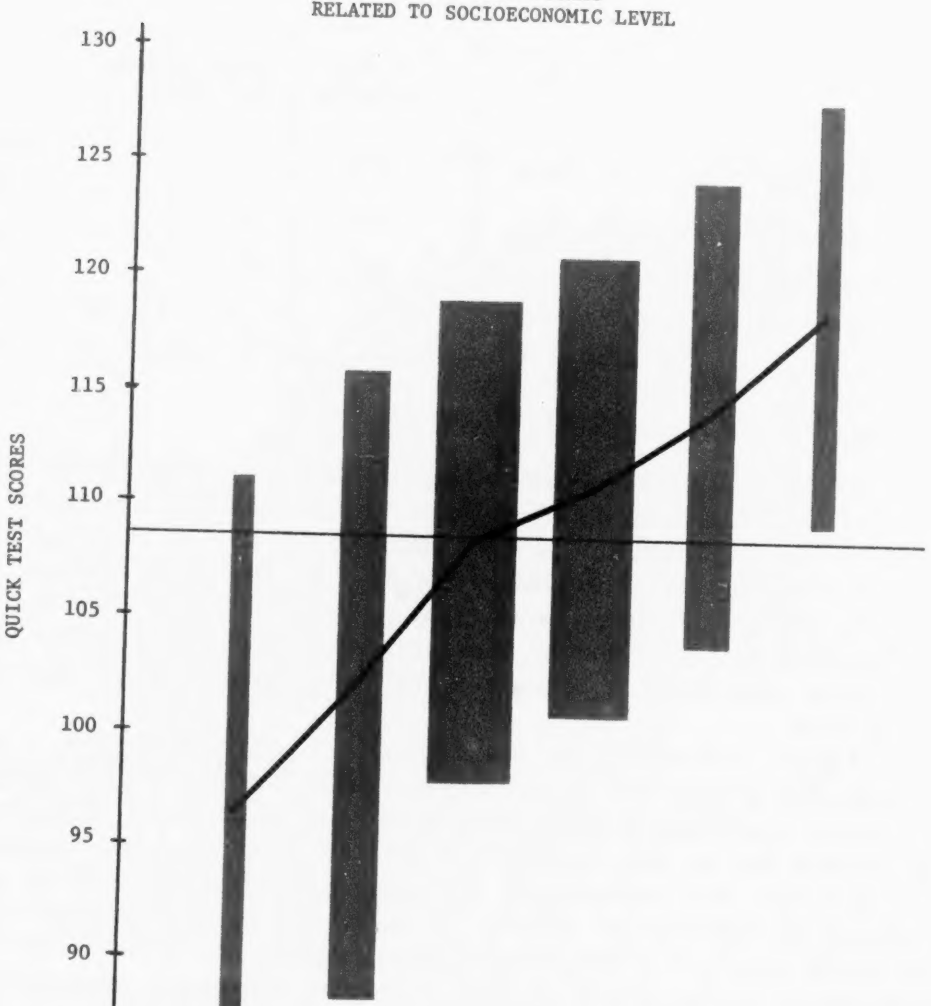
We have emphasized the interrelationships among background factors, and the consequent need for multivariate techniques to examine the relationship of each background factor to other dimensions—including intellectual ability. In the next section we will introduce such multivariate procedures in predicting scores on the Quick Test (QT); first, however, we will examine separately the gross relationship between each background factor and the Quick Test.

Figure 4-1 shows the strong positive correlation (Eta = .44) between QT scores and socioeconomic level. Although this finding was to be expected, it is nevertheless very important; throughout the remainder of this monograph we will have to deal carefully with the fact that advantages in family SEL are followed by advantages in intellectual ability. Indeed, we will sometimes find that some positive relationships between SEL and other criterion dimensions can be interpreted as occurring "through" intelligence.

We noted in Chapter 3 that large families tend to be lower in SEL (see Figure 3-1). A very similar relationship appears when family size is related to QT scores, as shown in Figure 4-2. Those respondents with just one sibling have the highest mean QT score, and as the number of siblings increases beyond one there is a steady decrease in mean QT (Eta = .33). This similarity suggests that family size might be simply a substitute for SEL. To put it another way, if we already knew a respondent's SEL, would we predict his QT score better if we also knew his family size? Data presented later show that some of the relationship between family size and QT cannot be explained in terms of SEL. It appears that family size is related to test scores for other reasons as well.

FIGURE 4-1

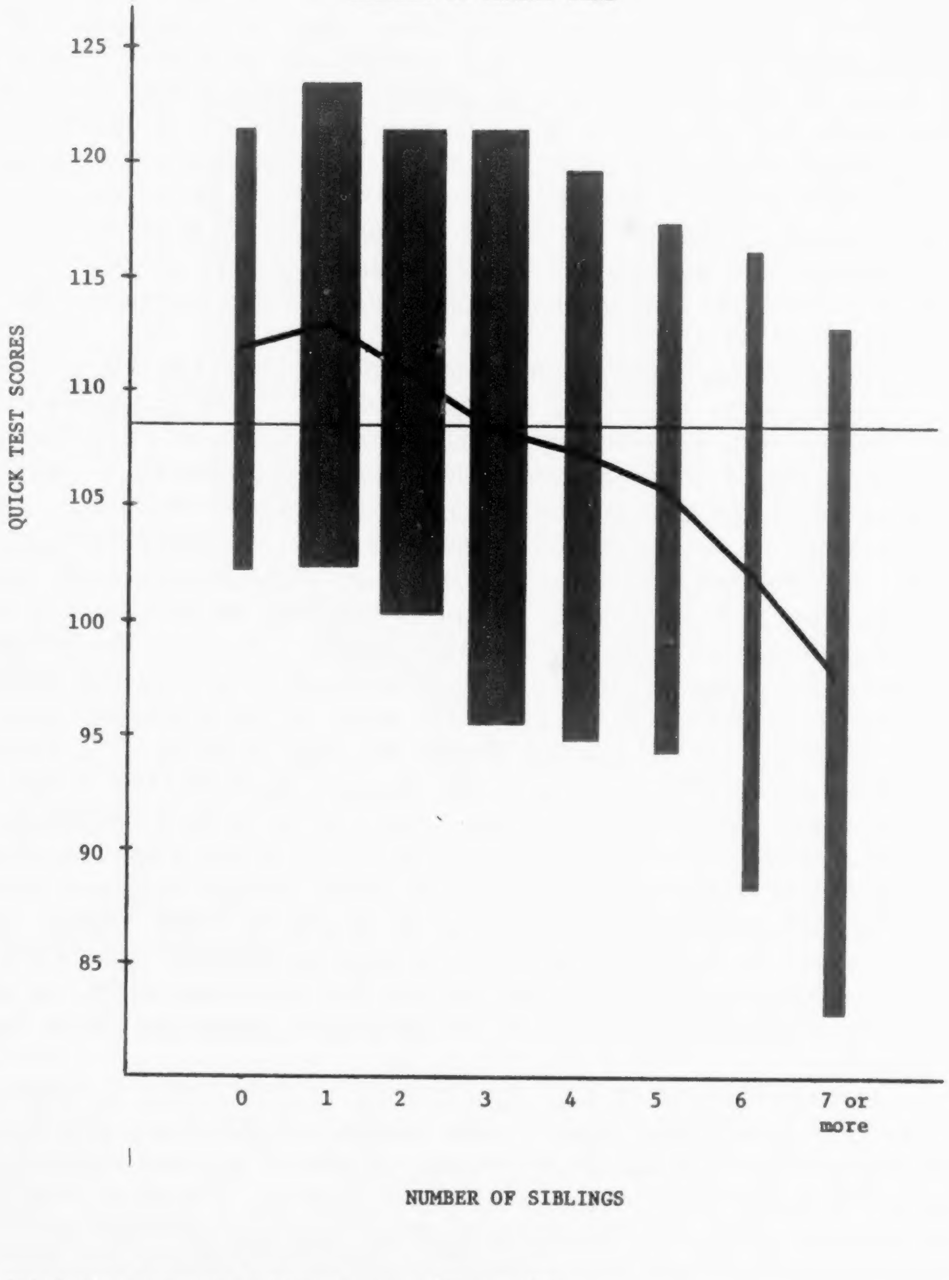
QUICK TEST SCORES
RELATED TO SOCIOECONOMIC LEVEL



Solid line connects subgroup means (Eta = .44).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 4-2

QUICK TEST SCORES
RELATED TO FAMILY SIZE



Solid line connects subgroup means (Eta = .33).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

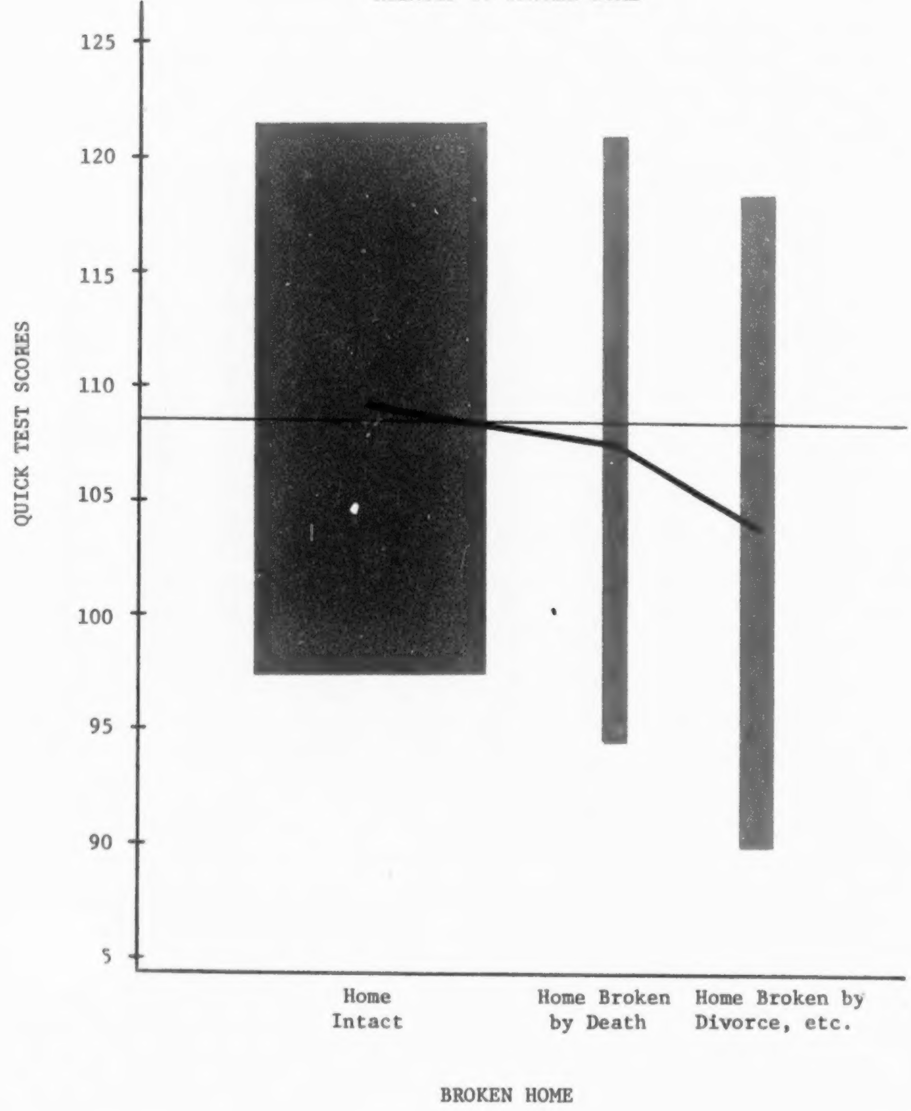
In contrasting QT scores for respondents in broken versus intact families, we find again that families broken by death are quite different from those broken by divorce or separation. As Figure 4-3 indicates, there is a modest difference in mean QT scores (about five points) between respondents in intact families and those in families broken by divorce or separation. On the other hand, QT scores for boys in families broken by death are nearly identical to scores for boys from intact families. We noted earlier (see Figure 3-2) that lower mean SEL occurs only in those broken homes caused by divorce or separation. Given that a parallel pattern has been found for QT scores, it will be important to examine whether any of the "broken home effect" remains after taking account of SEL.

The relationship between Quick Test scores and the family relations scale is presented in Figure 4-4. There is relatively little association between the two measures (Eta = .16). There is, in general, a slight tendency for higher QT scores to occur in families characterized as having more positive relations, but this tendency is reversed at the extremes of the family relations scale. At the one extreme, a respondent who characterizes his relationships with parents in the most glowing terms possible is a bit less likely to be highly intelligent than a boy who describes his family relations as strong—but not extremely so. At the other extreme, those boys who characterize their family relations in the worst possible terms are up at the average level of QT, while respondents describing fairly poor family relations tend to be a bit below average on the QT. We are, however, very suspicious about that slight curvilinear pattern. It may be, for example, that the most intelligent respondents are more critical and are less likely to be extreme in their praise of family or other aspects of their lives. In short, it seems as plausible that QT differences influence slightly responses on the family relations scale, as in turn, those family relations—as we measured them—influence intelligence.

Figure 4-5 shows that Quick Test scores differ according to religious preference (Eta = .26). Jewish respondents are substantially above average in QT scores, Catholics are about average, and Protestants cover a range of mean scores. Those in Baptist and Church of Christ denominations score a bit lower than the total sample; Methodists are about average; and Lutherans, Presbyterians, and Episcopalians score highest among Protestants. This pattern of relationships closely parallels that between religious preference and socioeconomic level (Figure 3-3).

FIGURE 4-3

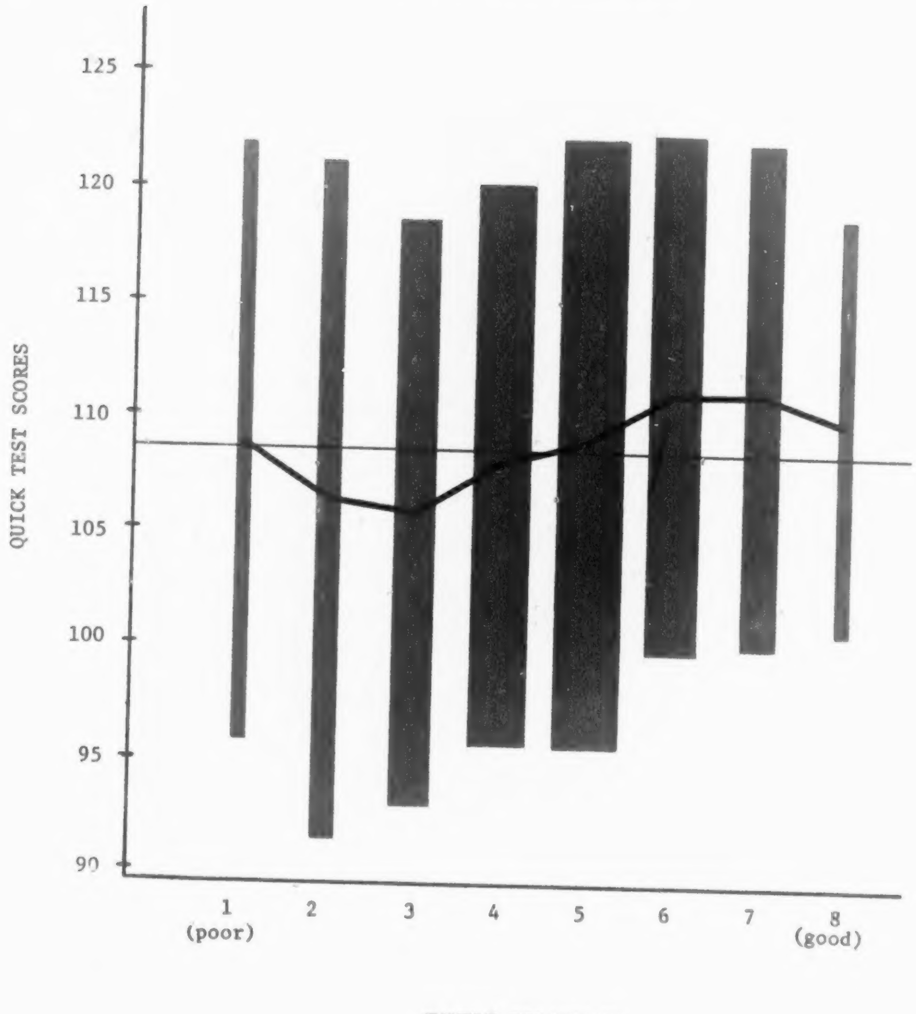
QUICK TEST SCORES
RELATED TO BROKEN HOME



Solid line connects subgroup means (Eta = .14).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 4-4

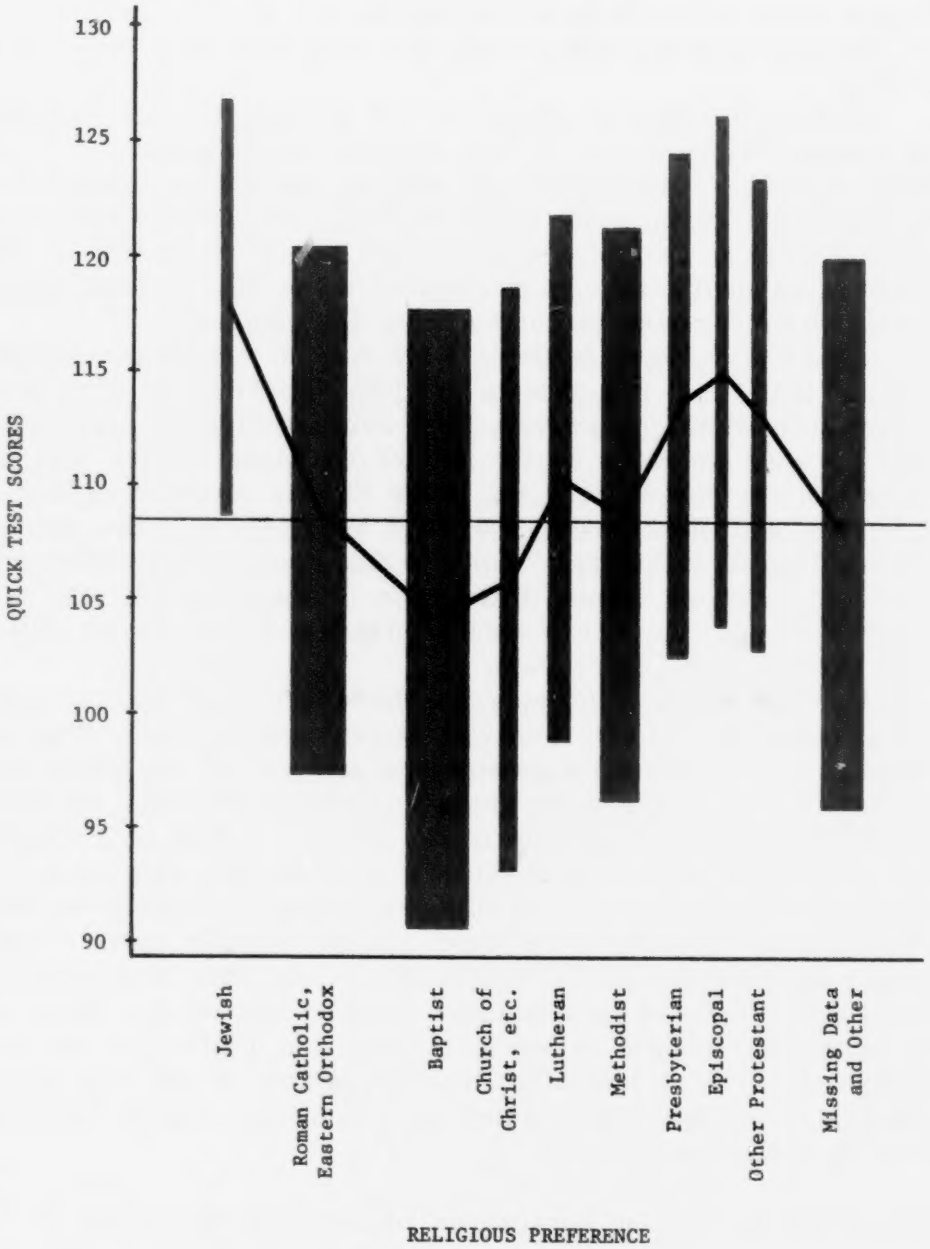
QUICK TEST SCORES
RELATED TO FAMILY RELATIONS



Solid line connects subgroup means (Eta =.16).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 4-5

QUICK TEST SCORES RELATED
TO RELIGIOUS PREFERENCE



Solid line connects subgroup means (Eta = .26).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

There is only a small relationship between family political preference and QT scores (see Figure 4-6). Those respondents in mildly Republican families have the highest QT score, those in strongly Democratic families are lowest (Eta = .13). Here as before, the relationships with the QT are very similar to those found for SEL.

Community size is related to QT scores only for respondents raised on farms or in the country (see Figure 4-7). QT scores for those raised on farms average about five points lower than the grand mean, while those raised in the country but not on farms are about two points under the grand mean (Eta = .17). As we noted in the preceding chapter, mean SEL is also lowest for respondents raised on farms or in the country.

Racial Differences in Quick Test Scores. In the last chapter we stated that black respondents are lower in SEL and have more siblings than whites; moreover, these relationships are particularly strong when we focus on the half of our black sample who are in southern segregated schools. Since SEL is strongly related to QT scores, and since blacks are lower in family SEL than whites, we would expect on this basis alone to find some racial differences in the QT. Indeed, racial differences in the QT do appear (see Figure 4-8), and they are somewhat parallel to the racial differences in SEL (see Figure 3-7).

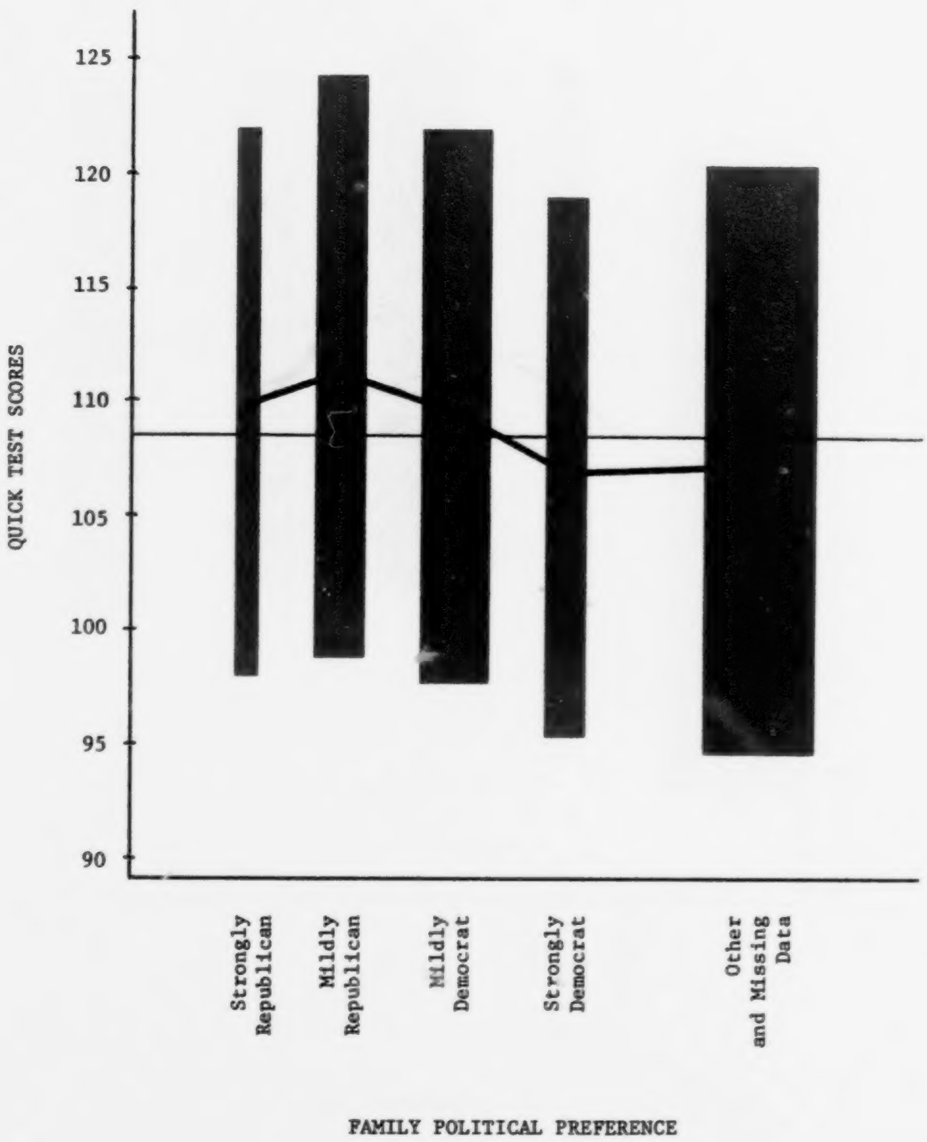
Are the racial differences in the Quick Test nothing more than a "reflection" of the family's socioeconomic level? The evidence already presented suggests they are not. If the racial differences in test scores were simply a reflection of SEL we would expect the pattern relating race to QT (Figure 4-8) to be a watered down version of the pattern relating race to SEL (Figure 3-7)—"watered down" because QT is only partially predictable from SEL. In fact just the opposite is the case. In our sample, race is more *strongly* associated with QT scores (Eta = .46) than it is with SEL (Eta = .29). It would thus be impossible to account for all of our test score differences in terms of SEL. In particular, we will shortly see evidence indicating that the pattern of low test scores by blacks in southern segregated schools is not dramatically reduced by controlling SEL.

Multivariate Analyses of Background Factors and Test Scores

We have found thus far that Quick Test scores are strongly related to socioeconomic level. We have also seen that other background factors are related to QT scores—and in very much the same way that they are related to SEL. Such findings have

FIGURE 4-6

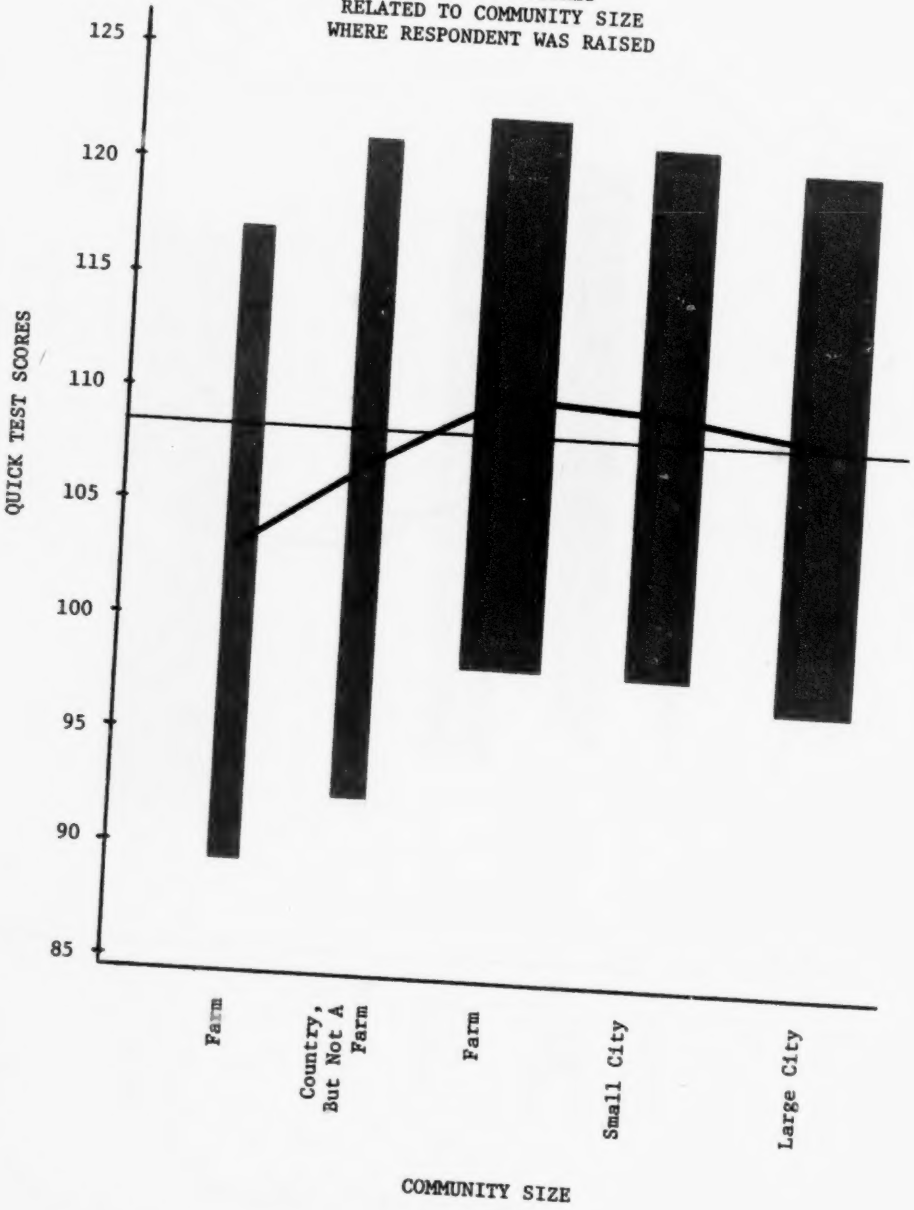
QUICK TEST SCORES RELATED
TO FAMILY POLITICAL PREFERENCE



Solid line connects subgroup means (Eta = .13).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 4-7

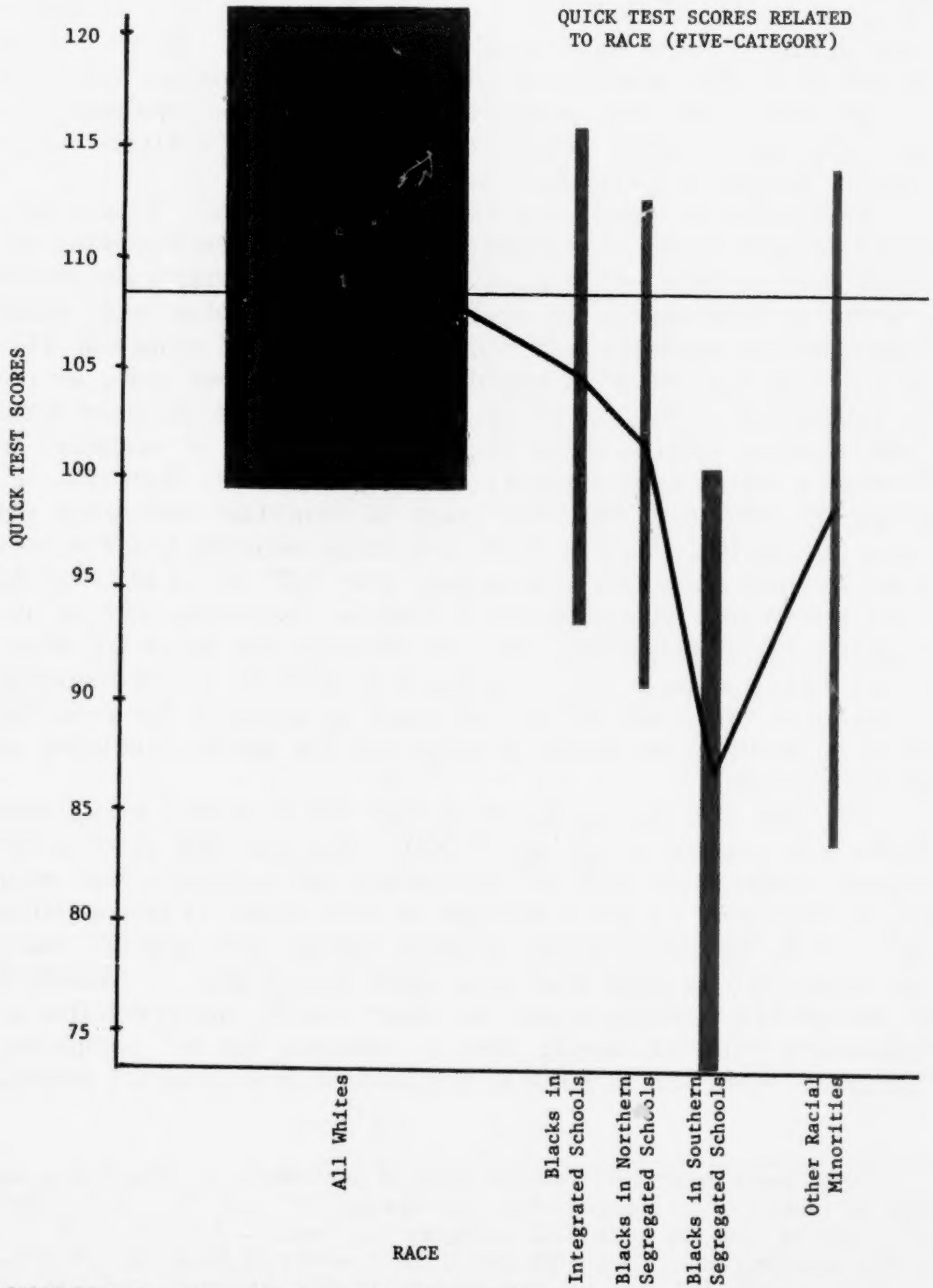
QUICK TEST SCORES
RELATED TO COMMUNITY SIZE
WHERE RESPONDENT WAS RAISED



Solid line connects subgroup means (Eta = .17).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 4-8

QUICK TEST SCORES RELATED TO RACE (FIVE-CATEGORY)



Solid line connects subgroup means (Eta = .46).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below subgroup mean.
See Appendix E for further information and for data underlying figures.

raised a fundamental question: after we have taken account of SEL, do the other background factors add anything new or unique to our ability to understand or predict QT scores. We will begin our answer to this question by predicting to QT scores that have had the effects of SEL removed (i.e., controlled statistically). Later we will examine more complex forms of analysis which handle a number of predictors simultaneously.

Prediction to Quick Test with SEL Controlled. It is a relatively simple matter to create a new variable representing QT scores "net of SEL"—that is, a variable representing the extent to which an individual's QT score is above or below what would be expected for someone with his family's SEL. A glance at Figure 4-1 will remind us of two things: first, as we move up the six categories of SEL there is a steady increase in mean level of QT scores; second, there is still a good deal of variation in QT scores within each category of SEL. It follows then that removing the effects of SEL will make an important difference, but it also follows that there is much remaining variation in QT scores to be explained after SEL is removed. Our "QT net of SEL" score is calculated in a straightforward fashion: beginning with an individual's actual QT score, we then subtract the mean QT score for his SEL category; the resulting (or residual) score indicates the extent to which his QT performance is above (if the resulting score is positive) or below (if negative) the score predicted on the basis of SEL.[5]

We are now in a position to see which family background factors are related to QT net of SEL. We find that most of the original relationships with QT scores are cut roughly in half when SEL is removed. A good example of this effect is presented in Figure 4-9; the relationship between family size and QT (solid line) reappears in attenuated form when family size is related to QT net of SEL (broken line). In other words, the predictive or explanatory value of family size is reduced, but not completely eliminated, when SEL is given first chance in predicting QT scores.

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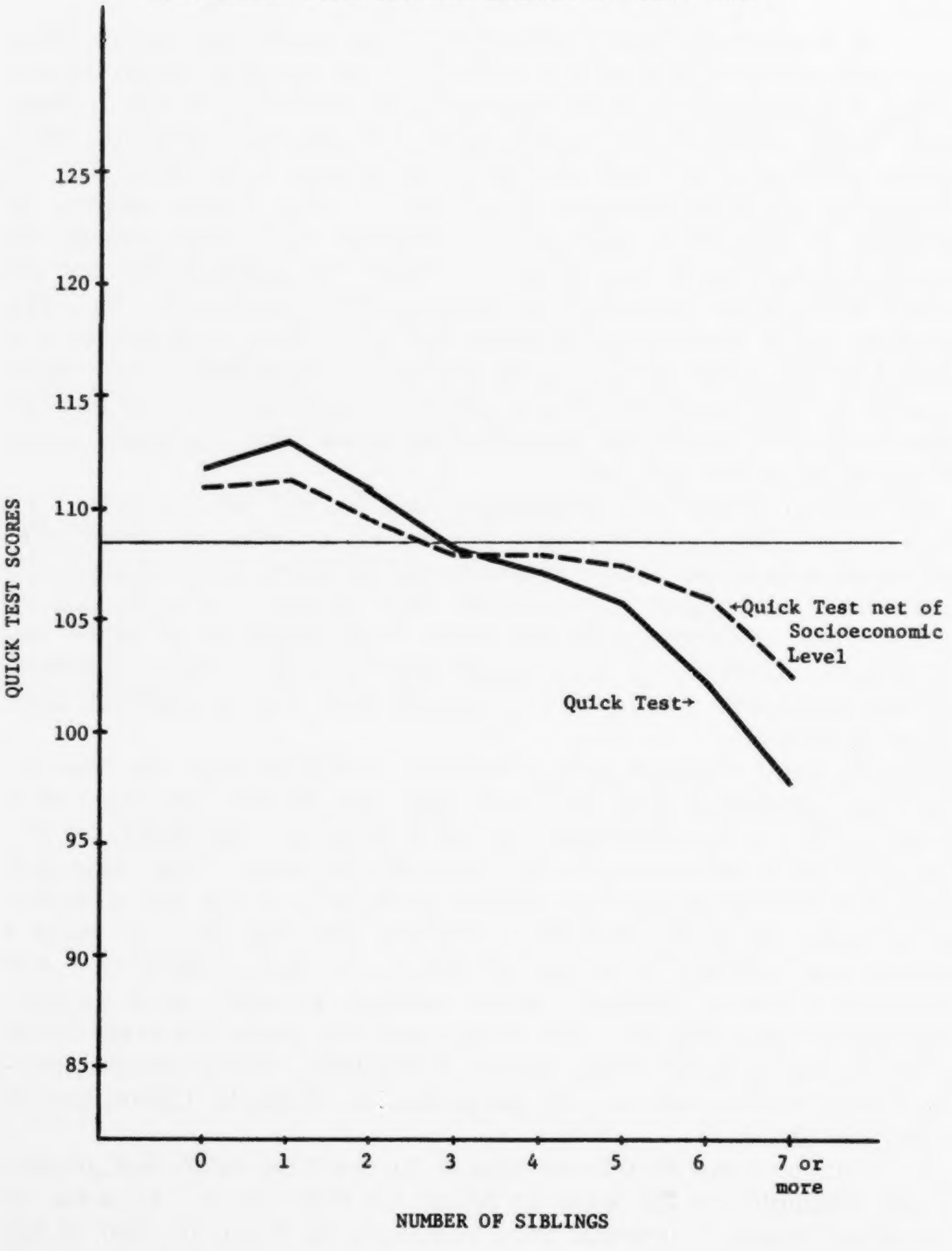
[5] For those unfamiliar with this sort of procedure, an illustration may help to clarify it. Consider two individuals, "A" and "B", each with a QT score of 106. A is in SEL category two (next to lowest) while B is in SEL category four. A's "QT net of SEL" score is equal to 106 minus 101.9 (the mean SEL for all respondents in SEL category two), or 4.1. B's score is 106 minus 110.8 (the mean for SEL category four), or *minus* 4.8. In other words, A's score of 106 on the QT is about four points higher than would be expected from knowing his SEL whereas B's score of 106 is nearly five points lower than his SEL would lead us to predict.

FIGURE 4-9

MEAN SCORES ON QUICK TEST AND QUICK TEST NET OF SOCIOECONOMIC LEVEL FOR EACH CATEGORY OF FAMILY SIZE



(Of course, we have not established that SEL should be given first chance in prediction; we will turn to that issue later in this chapter.)

A number of other relationships may be summarized quickly. The difference in QT scores between boys in intact families and those broken by divorce is reduced from about five points to less than three, when SEL is controlled. Relationships between religious preference and QT remain in attenuated form when SEL is controlled (Eta is reduced from .26 to .12). Other effects of looking at QT net of SEL are as follows: (a) Boys raised on farms average about two QT points below the grand mean, but all other differences related to community size disappear. (b) The already small association between QT and family relations is reduced to the point of having no practical importance. (c) Similarly, the relationship between family political preference and QT becomes very small; the largest departures from the grand mean are just over one QT point.

Racial differences with SEL controlled are presented in Figure 4-10. The figure provides a contrast between (a) racial differences with no statistical controls and (b) those same differences with SEL controlled. Controlling SEL leads to a reduction in black-white differences in all three subcategories of black respondents; however, a very large discrepancy remains between whites and those blacks in our sample who are in southern segregated schools.

Multiple Classification Analysis. We have thus far used analysis techniques that deal with only one or two variables at a time. When a question involved more than two variables, we reduced it to a sequence of two-variable relations. For example, in order to look at the relationship between race and QT with SEL controlled, we first used two variables (QT and SEL) to build a single new variable ("QT net of SEL"), and then related that new variable to race. However, more complex analyses, such as predicting the QT using SEL *and* family size *and* religious preference, require sophisticated multivariate techniques. One technique, particularly well-suited to our purposes, is Multiple Classification Analysis (MCA).[6]

Our purpose in this section is to describe MCA and provide some examples of the ways in which we will use it. In doing so we have chosen to present MCA primarily in terms of *what* it can

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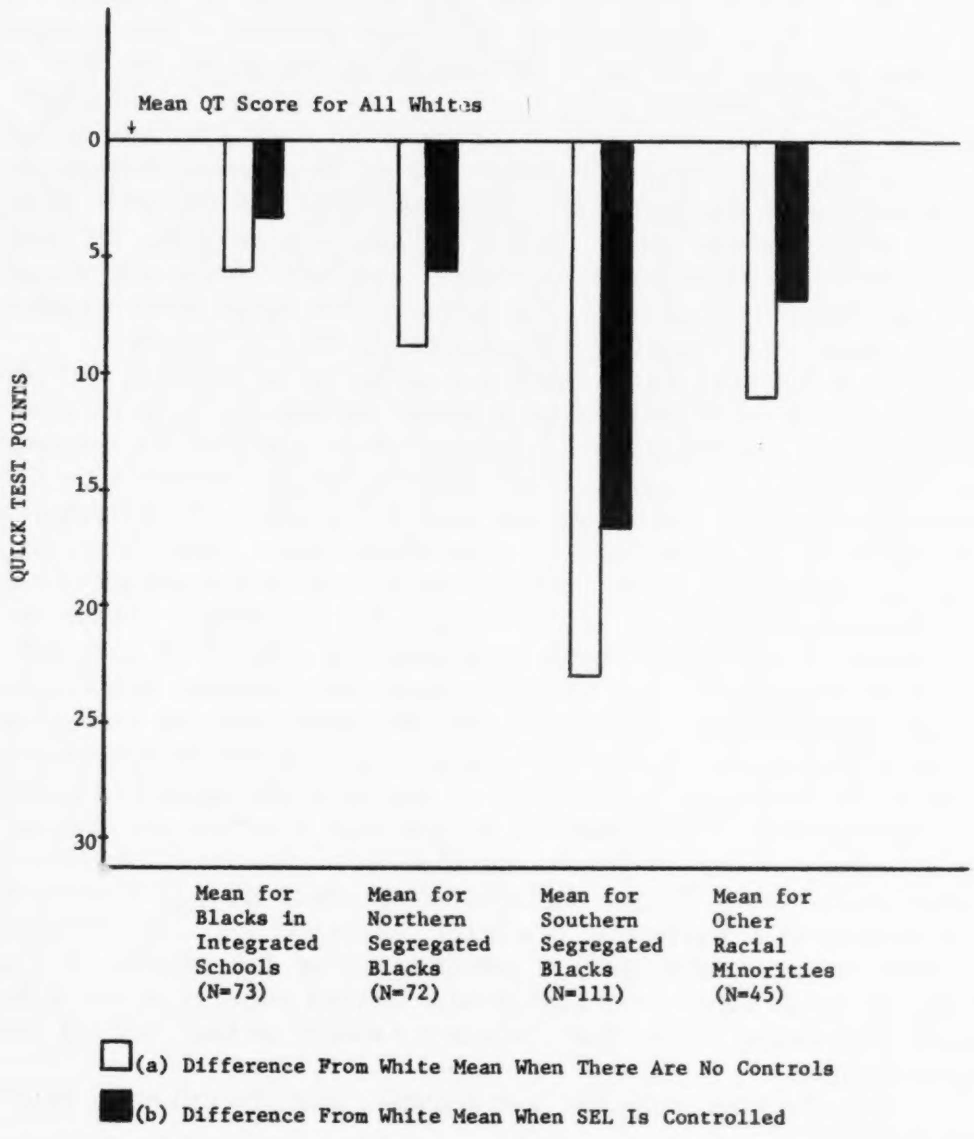
[6] The discussion to follow draws heavily on several other descriptions of Multiple Classification Analysis: Andrews, Morgan and Sonquist (1967), Blau and Duncan (1967), Sonquist (1969), and Barfield and Morgan (1969).

FIGURE 4-10

COMPARISON OF RACIAL DIFFERENCES IN QUICK TEST WITH AND WITHOUT CONTROLLING FOR SOCIOECONOMIC LEVEL



do for us, with less emphasis on exactly *how* it does it. For those who wish it, a more complete discussion of the MCA model and the corresponding computer program is available (Andrews, et al., 1967).

We noted in Chapter 1 that this monograph is designed to be read by those with limited statistical training. The present section is likely to prove a bit demanding for some, in spite of our efforts to present MCA in simple and intuitively meaningful terms. In our judgment, this chapter and the rest of the monograph will be best understood by those who do familiarize themselves with MCA, as discussed in the present section. On the other hand, it is quite possible for a reader to "take our word for it" when it comes to interpreting multivariate analyses; those who prefer this approach may wish to skip ahead to the next major section, which deals with racial differences in Quick Test scores.

MCA permits us to predict a criterion dimension, say QT scores, using a number of background factors (or predictor dimensions) simultaneously. The procedure operates as follows: we begin with the mean of QT scores for all respondents (the grand mean)—this represents our best guess about any individual's QT score if we know nothing else about him. Then from that starting point we make adjustments upward or downward according to whatever information we have about the individual. These adjustments to the grand mean represent the effects of that individual's background—how he ranks along the predictor dimensions under consideration. In essence, the procedure calls for computing mean criterion scores for each category of a predictor dimension; thus it is analogous to the sort of analyses displayed in Figures 4-1 through 4-8. *The difference is that MCA provides an estimate of the effect of each predictor as if it were uncorrelated with all other predictors.* To put it another way, when MCA is examining the effects of a particular predictor category (e.g., the category "seven or more siblings") it estimates what the effects of that category would be if other background factors (e.g., race and SEL) were distributed within that category exactly as they are for the total sample.

For example, consider a respondent with the following characteristics:

(a) he is black and attending a southern segregated school (category 4 on our five-category race variable).
(b) he is in the next to lowest (second) family SEL category, and
(c) he has five siblings.

On the average, black respondents in southern segregated schools are 21.4 QT points below the grand mean. We've seen, however, that the background factors are highly interrelated—being in a southern segregated school goes hand in hand with low SEL and a large number of siblings. All of them contribute in some way to the minus 21.4 QT points. In this example we want to estimate how race predicts to QT score without the influence of other background factors—SEL and number of siblings. The MCA technique permits us to estimate that southern blacks in segregated schools would be 16.2 QT points below the grand mean, *if* respondents in this category were distributed like the total sample in terms of SEL and family size.

Any one of the other background factors could be similarly isolated. Instead of race we might take SEL. The mean QT for all those in the next to lowest SEL category is 6.6 points below the grand mean: Again, that figure represents the racial and family size characteristics of persons in that SEL category. The MCA technique, however, can estimate the QT score if race and family size in the lowest SEL category were distributed the same way they are in the total sample. The MCA estimate of the effect of being in the next to the lowest SEL category is 4.4 QT points below the grand mean.

Similar estimates could be made for number of siblings. The MCA prediction to QT scores from a family the size of our example—five siblings—reduces QT scores from 2.7 points to 0.9 points below the grand mean.

The figures we've just been discussing are presented in Table 4-2. The first column, which presents the three effects with no adjustment, might suggest that our illustrative respondent would end up a total of 30.7 QT points below the grand mean. But that form of estimate, which fails to make any adjustment for intercorrelated predictors, is something like triple jeopardy. By way of contrast, the total of adjusted estimates in the second column (adjusted for intercorrelation among three predictors) leads us to predict a more realistic 21.5 QT points below the grand mean. This happens to be just about the average for all black respondents in southern segregated schools.

It may be useful to explain the difference between these MCA data and the data examined earlier (Figure 4-10) relating race to "QT net of SEL." There is a subtle but important difference: MCA looks at predictors *simultaneously* and adjusts *each* predictor to take some account of its relationship with the other predictor(s), whereas the analysis presented in Figure 4-10 allowed the race variable to predict only to the variation left in QT scores after the full effect of SEL has been removed.

TABLE 4-2

EXAMPLE OF ADJUSTMENTS IN QUICK TEST SCORES FOR INTERCORRELATED PREDICTORS

Category	(1) Unadjusted Effects on Grand Mean	(2) Adjusted Effects with 3 Predictors
Southern segregated black (race category)	-21.4	-16.2
Second SEL category	-6.6	-4.4
Five siblings	-2.7	-0.9
Total estimated effect on grand mean	-30.7	-21.5

This distinction is further illustrated in Table 4-3, where three different ways of relating predictors to a criterion are compared. First, we can consider the relationship for one predictor unadjusted for any other effects, shown in the first column. Second, we can consider the *unique* effects of a predictor after removing all effects that could be attributed to another predictor—in other words, we can predict to residuals. In the lower half of the second column are shown the unique effects of race on QT after removing the effects of SEL; in the upper half of that column is the reverse relationship, showing what would happen in the unlikely event that we had attempted to predict QT scores first from race and see how the residual variation in QT is predicted by SEL. Of course, there is some variation in QT that cannot be assigned uniquely to either race or SEL, because there is considerable overlap between these predictors in their relationship to QT. MCA deals with this problem by assigning some of this overlapping effect to each of the predictors. The effects of this approach are shown in the third column.

Now let us compare the three columns in Table 4-3, and contrast the findings that emerge from the three ways of relating predictors to a criterion. First, it is clear that the largest effects for either SEL or race appear in the first column when there is no adjustment for correlation with other predictors. Second, the smallest effects appear in the second column when we predict the residuals—that is, when we let the other variable go first in a step-wise predictive sequence. The results from MCA (third column) fall in between the first two procedures, but they are much more similar to the results using residuals (second column) than to the unadjusted relationships (first column).

TABLE 4-3

THREE WAYS OF PREDICTING QUICK TEST FROM RACE (FIVE-CATEGORY) AND SEL

NOTE: Cell entries are in the form of signed (+ or -) departures from the QT grand mean (108.5). The standard deviation of QT scores for all respondents is 12.5.

Predictor Categories	Number of Cases (weighted)	(1) Unadjusted Prediction	(2) Prediction to Residuals[a]	(3) MCA Adjusted Predictions[b]
Categories of SEL:				
1 (lowest)	166	-11.6	-7.0	-7.9
2	384	-6.6	-4.6	-5.0
3	687	-0.2	-0.6	-0.5
4	648	+2.3	+1.2	+1.5
5	365	+5.5	+3.8	+4.2
6 (highest)	180	+9.8	+8.2	+8.6
9 Missing Data	84	-8.0	-4.6	-5.5
Racial Categories:				
1 (All whites)	2177	+1.9	+1.3	+1.5
2 (Blacks in integrated schools)	79	-3.6	-2.1	-2.5
3 (Blacks in northern segregated schools)	72	-6.9	-4.3	-5.0
4 (Blacks in southern segregated schools)	140	-21.4	-15.3	-17.0
9 (Other racial minorities)	46	-9.3	-5.4	-6.5

[a] In the upper half of the table, SEL is used to predict "QT net of race." In the lower half, race is used to predict "QT net of SEL."

[b] The MCA adjusted predictions in this table are based on two predictors; they do not match exactly the results shown in Table 4-2, which are based on a three-predictor analysis.

These illustrations support a general conclusion that is true for most of the analyses reported in this monograph: the results of MCA provide a useful approximation of the unique effects of predictors. We will find this adequate for our purposes, particularly since this procedure is much more convenient than removing other effects through the use of residuals.

Now let us review some of the most basic characteristics of MCA:

1. MCA can deal with predictors that are only nominal in form. This is essential, since most of our background variables—race, broken home, community size, religious and political preferences—are of this nature. In fact, predictors must be in categorical (nominal) form for MCA precedures. This represents no problem, since any continuous variable can be treated as a series of categories.

2. MCA can handle missing data on the predictor variables, simply by treating absence of data as another predictive category. (This property was illustrated in Table 4-3, where a seventh category of SEL consisted of missing data.) This characteristic of the program is quite valuable when dealing with a number of predictors each of which involves some missing data.

3. MCA can handle a wide range of interrelationships among predictors and between predictors and criteria. This general-purpose feature of MCA means that we can apply the same technique to all of our variables, thus avoiding the shifting frames of reference necessitated by alternate modes of analysis. A more basic advantage of this feature is that MCA can deal directly with intercorrelations that are the rule rather than the exception among background factors.

4. MCA requires that dependent variables be either (a) interval scales—such as test scores, grades, status of aspired occupation, or (b) dichotomies—such as planning to go to college or not. (This restriction presents no problem to us in this monograph, since nearly all of our criterion dimensions can be treated as approximately continuous and the exceptions are dichotomous or can be dichotomized.)

5. MCA assumes that the effects of predictor variables are combined *additively;* that is, it assumes that there is no interaction among predictors. This assumption is of critical importance, for it means that either the investigator must assume that no appreciable interaction exists (based on the other findings, theory, or intuition), or he must search the data for such interactions prior to applying the MCA technique. Without exception we have chosen the latter alternative.

Our strategy in looking for interactions prior to applying MCA is essentially that proposed by Sonquist (1969) in an article devoted to "finding variables that work." The strategy begins with a computer program termed the Automatic Interaction Detector (AID). As its name implies, the program is designed to search for interaction among predictor variables as they relate to any particular criterion.[7]

We need spend little time describing the use of AID in the present study. The technique was applied to each of the criterion dimensions reported herein. With one important exception, there were no meaningful interactions among the predictor dimensions (i.e., no interactions of the sort that require the construction of a new variable). Thus we can feel safe in applying MCA with its assumption of additivity.

The one exception noted above involves a triple interaction of race, region, and school integration. We have already noted that black respondents from southern segregated schools have scores which set them apart from other subgroups. Later in this chapter we will say more about this special category. For the present, it is sufficient to note that the variable we have termed "race" is a special purpose variable that *incorporates* the critical interactive effects of region and school integration.

Thus far we have described MCA in terms of input—that is, the type of data it can be used to analyze. In summary, the program is very flexible in using predictors—they can be "mere" nominal scales, have missing data, and be intercorrelated; however, MCA does assume that the effects of predictors are *additive*. The criterion or dependent variables must be interval scales or dichotomies. Now let us consider a few of the *output* features of the MCA program as used in this study.[8]

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[7] Sonquist described AID as an algorithm for locating interaction terms. "The essence of the algorithm is the sequential application of a one-way analysis of variance model. The objective is to partition the sample into a series of non-overlapping subgroups whose means explain more variance than any other competing partition at that stage. Information is produced which indicates whether (and if so, how) any of the predictors affect the criterion variable differently in various important parts of the sample." (Sonquist, 1969, pp. 85-86).

[8] The following is adapted directly from the description by Andrews, et al., (1967), pp. 21-22.

1. *For each category* of each predictor the MCA program output provides: (a) number of cases in the category, and that number expressed as a percentage of the total number of cases; (b) mean value of the dependent variable within the category, i.e., the raw mean; (c) deviation of the category mean from the grand mean (the unadjusted effect of the predictor, as illustrated in column 1 of Table 4-3); (d) MCA adjusted deviation from the grand mean after all other predictors have been held constant (as illustrated in column 3 of Table 4-3).

2. *For each predictor* the program output provides: (a) Eta and Eta^2—Eta is the correlation ratio; when squared, it indicates the proportion of the variance explainable by a predictor operating alone (i.e., without adjustment for correlation with other predictors); (b) Beta and Beta^2—statistics directly analogous to Eta and Eta^2, but based on the *adjusted* means and thus reflecting the explanatory ability of the predictor with all other predictors held constant.[9] In terms of our illustration in Table 4-3, Eta^2 represents the proportion of variance explainable in terms of the *unadjusted* deviation scores in column 1, whereas Beta^2 represents that proportion explainable in terms of the *adjusted* deviations in column 3.

3. *For all predictors considered together,* the program computes the sum of squares which can be explained by all predictors together—and when this is viewed as a percentage of the total sum of squares, it indicates how much variance in our data is explained by all predictors operating simultaneously in an additive model.

The program also computes R, a multiple correlation coefficient which is adjusted for degrees of freedom. When squared, this coefficient is usually very similar (in our analysis) to the proportion of the total sum of squares attributed to all predictors operating together. The correction for degrees of freedom means that the R^2 is slightly smaller (with a sample the size of ours and the predictors we use) than the proportion of variance explained.[10]

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[9] "The term Beta is used here because the measure is analogous to the standardized regression coefficient, i.e. the regression coefficient multiplied by the standard deviation of the predictor and divided by the standard deviation of the dependent variable, so that the result is a measure of the number of standard deviation units the dependent variable moves when the explanatory variable changes by one standard deviation" (Andrews, et al., 1967, p. 22).

[10] Unfortunately, estimates corrected for degrees of freedom are available only some of the time; in particular, the Eta and Beta statistics mentioned above do not include such a correction. We will sometimes want to *compare* proportions of variance explained at several levels; on these occasions, we will consistently speak in terms of the uncorrected proportion of the total sum of squares in our sample data.

We turn now from methodological exposition to our first major application of MCA]

Multiple Prediction to the Quick Test. Let us apply the MCA technique to the task of predicting Quick Test scores using all of our background dimensions. Table 4-4 presents Eta, Eta^2, Beta, and Beta^2 statistics for each background dimension predicting to QT, along with a summary proportion of variance explained by the multiple prediction (using all eight predictors simultaneously).[11] This form of summary table, which at once indicates both the unadjusted (bivariate) relationship and the adjusted (multivariate) relationship for each predictor, is a very useful starting point in examining patterns of prediction to a particular criterion. Since we will rely on similar tables throughout the remainder of this volume, let us examine this first specimen in some detail.

The Eta statistics in Table 4-4 correspond directly to the unadjusted relationships shown in Figures 4-1 through 4-8. The strongest relationships with QT scores are found for socioeconomic level and race. Number of siblings would, by itself, account for only about half as much variance in QT scores as would either SEL or the race measure; however, it is a good deal stronger predictor (unadjusted) than any of the remaining background variables.

Turning to the Beta^2 statistics, which reflect the effects of adjustment for intercorrelated predictors through MCA analysis, we find that the same three background factors are the strongest predictors. But when we *compare* Eta^2 with Beta^2 for each variable, we also find that the adjustment procedure operates somewhat differently from one predictor to another. Specifically, the adjusted effect for SEL is noticeably lower than the effect for race, whereas their unadjusted effects were nearly the same size; perhaps more striking is the very great reduction in effect for number of siblings, when adjusted for the contribution of other predictors. We discovered earlier in this chapter that a good deal of the relationship between QT and number of siblings *could* also be explained in terms of SEL. We mention it again here to illus-

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[11] There is a bit of redundancy in presenting both squared and unsquared values for Eta and Beta; however, we consider it desirable because the discussions and displays that follow make use of these relationships in both forms. Figures that relate a predictor to a criterion correspond most closely to the unsquared versions of these statistics; for example, the "slope" of the relationship shown in Figure 4-1 corresponds roughly to the Eta statistic. On the other hand, when we consider percentages of variance we can explain, the Eta^2 (and also Beta^2) statistics are more appropriate.

TABLE 4-4

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO THE QUICK TEST

	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
BACKGROUND PREDICTORS:	Eta	Eta^2	Beta	$Beta^2$
Socioeconomic Level	.44	.198	.26	.067
Number of Siblings	.33	.111	.13	.016
Broken Home	.14	.020	.02	.001
Family Relations	.16	.026	.08	.007
Religious Preference	.26	.068	.11	.011
Family Political Preference	.13	.017	.05	.003
Community Size	.17	.028	.06	.004
Race (Five-Category)	.46	.209	.32	.101

R = .584

R^2 = .341

Percent Variance Explained = 35.3

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
$Beta^2$ is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

trate that in this case a single, general-purpose application of MCA leads us to the same basic conclusion as the more difficult and costly prediction to residuals—i.e., "QT net of SEL"—shown in Figure 4-9.

The Eta^2 and Beta^2 statistics for the remaining predictors in Table 4-4 are also consistent with what we learned earlier in the chapter. Their unadjusted effects (Eta^2) are rather small to begin with, and when we adjust for SEL and other predictor variables (Beta^2) their effects are reduced nearly to zero. To put it another way, the Beta^2 statistics in Table 4-4 lead us to suppose that we could do a fair job of predicting QT scores using only measures of race, SEL, and number of siblings—and that we would not account for much more of the variance by adding the five other background predictors. Let us test that supposition further.

Using all eight background predictors simultaneously in the MCA model, we can account for 35.3 percent of the variance in QT scores (see Table 4-4). Repeating the MCA, this time using only race, SEL, and number of siblings as predictors, we account for 33.0 percent of the variance. Thus we conclude that adding the other five predictors enables us to account for only an additional 2.3 percent of the QT variance.[12]

Given that three background variables, SEL, race, and number of siblings, are the most important predictors of QT scores, we have yet to deal adequately with the relative importance of each of these predictors. This issue is often raised simply in terms of how much variance in the criterion is attributable to each predictor. When we deal with correlated predictors, however, there is no single correct statement about how much variance is attributable to any single predictor. We can, however, usually place some upper and lower boundaries on the variance accounted for—and then make some judgments about the relative importance of different predictors.

Ordinarily, the largest effect we could attribute to a predictor appears when no adjustment is made for other correlated predictors; and the Eta^2 statistics in Table 4-4 show the size of such effects for all of our predictors. Thus we can say that if we based our prediction of QT scores on SEL alone, we could account for 19.8 percent of the variance in our sample; predicting from our race measure alone, we could account for 20.9 percent of the variance; and predicting from number of siblings, we could account for 11.1 percent of the variance. If these effects were not overlapping, due to correlated predictors, we could simply add the Eta^2 values to arrive at a total of 61.9 percent of the QT variance attributable to our three predictors. In fact, however, they account for only 33.0 percent.

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[12] Actually, the contribution of the additional five predictors is slightly exaggerated because of our use of an uncorrected measure of variance accounted for. If we compare the squared multiple correlation coefficients (R^2), which *do* involve a correction for degrees of freedom, we find values of .341 and .326 for eight versus three predictors (respectively). Thus in adding five more predictors we are accounting for an estimated 1.5 percent additional population variance in QT.

The combined prediction is, of course, a good deal larger than the effect of any one of the predictors operating alone. But we do not yet know whether the combined prediction based on three variables is much better than a prediction based on two of the three. For example, would a prediction based on SEL and race be almost as good as the one that also includes number of siblings as a predictor? A glance at the Beta^2 column in Table 4-4 suggests that it might. But to answer the question accurately, we need to run the MCA predicting to QT scores from just two variables—SEL and race. Performing the analysis, we find indeed that 31.3 percent of the variance is predictable from SEL and race. And now we are in a position to say that adding number of siblings as a predictor explains an additional 1.7 percent of the variance (which is the difference between the 31.3 percent value based on two predictors and the 33.0 percent value based on three predictors). This 1.7 percent of variance explained represents a sort of lower boundary on the variance attributable to our number of siblings variable. It is the explanatory power *unique* to this variable, that is, after the effects of the other two predictors have been deducted. Of course, it might be a bit arbitrary to place this particular variable last in the predictive sequence, so we have also calculated the unique contribution of the other two variables in the same fashion.

Table 4-5 summarizes the several effects we have been discussing and shows the unique contribution (or net effect) of each of our three predictors. We find the largest net effect for race, with SEL a close second, and number of siblings a weak third. This would seem to indicate that racial differences are the most important determinants of test scores; but we have already noted that the real difference is associated with a combination of race, region, and segregation. We have deferred the explanation of this combination variable; we can now deal with it more adequately.

TABLE 4-5

ALTERNATIVE PREDICTIONS TO QUICK TEST SCORES USING SEL, NUMBER OF SIBLINGS, AND RACE (FIVE-CATEGORY)

Predictor Variable(s)	Percent of Total QT Sum of Squares
1. Socioeconomic Level	19.8
2. Number of Siblings	11.1
3. Race (Five-Category)	20.9
4. Socioeconomic Level plus Number of Siblings	23.6
5. Socioeconomic Level plus Race	31.3
6. Number of Siblings plus Race	25.2
7. Socioeconomic Level plus Number of Siblings plus Race	33.0
8. Socioeconomic Level *net of* Number of Siblings and Race (7 minus 6)	7.8
9. Number of Siblings *net of* Socioeconomic Level and Race (7 minus 5)	1.8
10. Race *net of* Socioeconomic Level and Number of Siblings (7 minus 4)	9.4

Racial Differences in Quick Test Scores

We mentioned in Chapter 2 some of our reasons for using a race dimension which incorporated distinctions based on region and school segregation. We began our preliminary analyses of background variables knowing that we, like other investigators, would find racial differences in socioeconomic level, test scores, and other dimensions; and indeed, such differences were immediately evident in the data. Given the differences in test scores, we were interested in the extent to which they were explainable in terms of SEL and other factors. We found that controlling for SEL reduced racial differences in QT scores only moderately (Bachman, 1968). But when we set out to compare matched white and black students from the same schools, we confronted two important facts. First, the majority of black students attend schools that have no white students, making it impossible to match them with whites from the same school. Second, those blacks who could be matched with whites (because they were in integrated schools) were only about five QT points lower than the matched whites, in contrast to an over-all difference of fifteen points between blacks and whites. This reduction in difference appeared because the blacks in integrated schools have much higher QT scores than the blacks in segregated schools; for the whites in our sample, however, there are no test score differences associated with integration (Mednick, 1968).

Based on early findings, we decided that it would be misleading to group all black students together, and we have consistently distinquished between blacks in integrated schools and those in segregated schools. We had not orginally intended in this monograph to deal with *regional* differences. However, some early exploration of region and race made it abundantly clear that regional differences should not be ignored.[13]

Quick Test Scores Related to Region and Race. Table 4-6 presents QT scores for each region separately for whites, blacks in integrated schools, and blacks in segregated schools (the 45 cases in other minority groups are not shown in the table).[14] Part A presents mean QT scores and also indicates the number of cases for each subgroup; Part B presents subgroup means for the residual score "QT net of SEL"—thus providing an indication of racial and regional differences after the effects of socioeconomic level have been removed.

The regional differences for whites, after effects of SEL have been removed (see Part B of Table 4-6), are small and of little importance. Whites in the Northeast are about 2 QT points above the national average for whites, whereas those in the West are 1 point below the national average. For blacks in integrated schools, there are no differences that can meaningfully be attributed to region. On the other hand, when we look at regional differences for segregated blacks we find large and highly reliable differences. The unadjusted QT scores for segregated blacks in the South are nearly 14 points lower than the North Central group; after adjustment for SEL the difference remains greater than 10 points. (Note

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[13] Thanks are due to our colleague, Dr. Patricia Gurin, for urging the importance of examining regional differences in the present monograph.

[14] Our regional grouping has been used for some years by the Survey Research Center. The *Northeast* region consists of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont. The *North Central* region includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, North Dakota, Nebraska, Ohio, South Dakota, Wisconsin. The *South* consists of Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, Washington, D.C., West Virginia. The *West* includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

TABLE 4-6

REGIONAL DIFFERENCES IN QUICK TEST SCORES

		Region				
		North-east	North Central	West	South	Total
Part A: Mean Quick Test Scores	All whites	112.6 (N=445)	110.4 (N=623)	109.4 (N=324)	109.3 (N=520)	110.4 (N=1912)
	Blacks in integrated schools	108.7 (N=32)	*[a] (N=9)	*[a] (N=11)	104.6 (N=21)	104.9 (N=73)
	Blacks in segregated schools	*[a] (N=32)	100.8 (N=58)	none in sample	87.1 (N=111)	92.0 (N=183)
Part B: Mean "QT net of SEL"	All whites	3.2	0.9	-0.2	1.1	1.3
	Blacks in integrated schools	-0.6	*[a]	*[a]	-1.3	-2.1
	Blacks in segregated schools	*[a]	-5.1	none in sample	-15.3	-11.6

NOTE: Cell entries in Part B are mean values for the residual score "QT net of SEL." They indicate the extent and direction of subgroup departure from the grand mean, after the effects of socioeconomic level have been removed. Thus, for example, the entry for all whites in the Northeast indicates that they average 3.2 QT points above the grand mean after controlling for SEL.

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[a] Means based on fewer than 20 cases are not presented.

that this is not simply a regional difference, since *integrated* blacks are relatively as well off in the South as in any other region.) In short, there is really only one important difference in Table 4-6—southern blacks in segregated schools fall far below the national average for Quick Test scores, even after adjusting for SEL.

The differences shown in Table 4-6 led us to examine distributions of Quick Test scores separately for racial subgroups. Figure 4-11 shows dramatically the fact we already have noted—there is relatively little difference in QT scores between whites and integrated blacks in our sample; however, southern blacks in segregated schools show a markedly different distribution. Indeed, the QT distribution for southern segregated blacks is so different that we decided to re-examine our predictions of QT, excluding this subgroup from our analysis.

Analyses Excluding Racial Subgroups. How different would our findings be if we related background factors to QT scores in all of our sample except southern segregated blacks? It seems obvious that the predictive effect of race as a background variable (i.e., its ability to account for variance) would be reduced; nearly half of our black sample would be removed, and much of any change might be attributed to that reduction alone. As a check against this possibility, we decided to include a parallel analysis which excludes the other half of the black sample—those in integrated schools and in northern segregated schools.

Table 4-7 is an expansion of Table 4-4; it presents MCA data relating background factors to QT under three conditions, total sample (column A), sample minus southern segregated blacks (column B), and sample minus all other blacks (column C). First let us compare columns A and B, to see the effect of removing southern segregated blacks from the analysis. At the top of the table we find that the unadjusted effects (Eta^2) for SEL and number of siblings are lowered when southern segregated blacks are excluded. This is not surprising, since the excluded group is very low in SEL and high in number of siblings. On the other hand, the adjusted effects (Beta^2) for SEL and number of siblings are not reduced at all.[15] Columns A and B do not differ greatly for

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[15] In fact, the Beta^2 values for SEL and number of siblings are a bit *higher* in column B than in column A. This comes about because of the reduced variance of QT scores in column B, rather than because of a "heightened" effect of SEL. To put it another way, we can say that mean QT scores increase about 2.5 points each time we move up one category on our SEL scale—and this holds whether or not the analysis excludes southern segregated blacks. However, when that subgroup is excluded, there is less overall variation in QT scores, thus making our increase of 2.5 QT points per level of SEL a *relatively* more important relationship (reflected in the slightly higher Beta^2).

FIGURE 4-11

DISTRIBUTION OF QUICK TEST SCORES FOR WHITES, INTEGRATED BLACKS, AND SOUTHERN SEGREGATED BLACKS

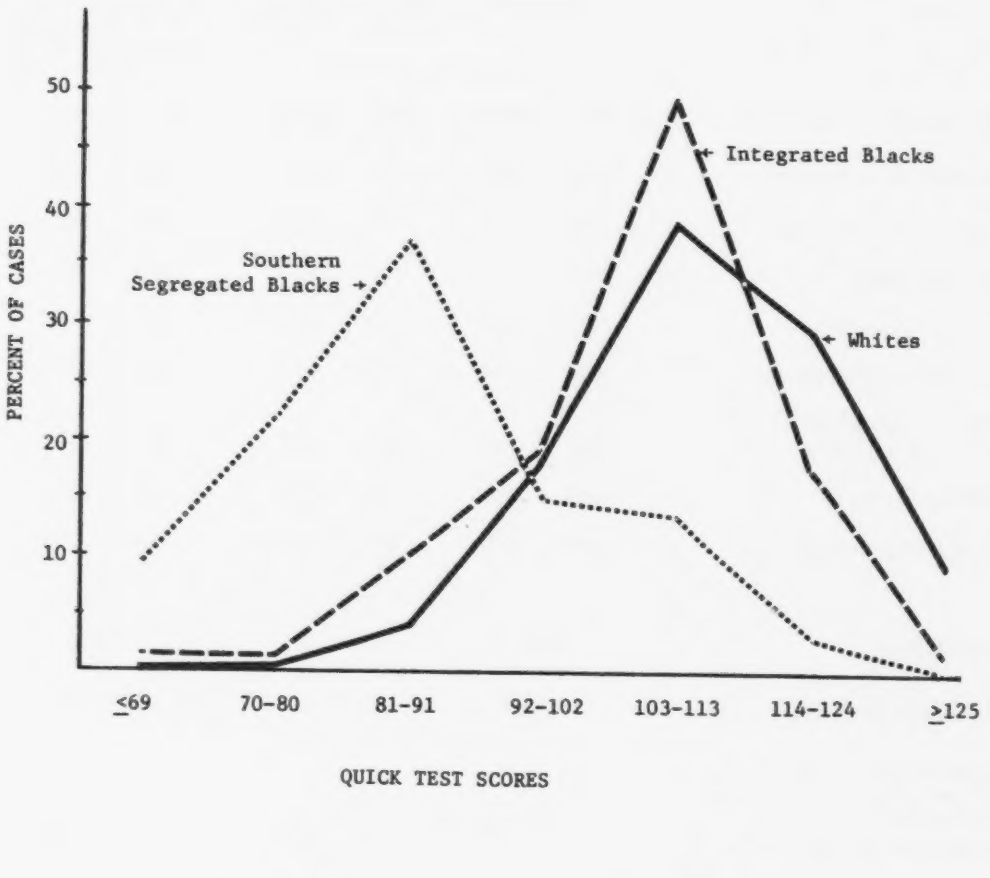


TABLE 4-7

BACKGROUND PREDICTIONS TO QUICK TEST: EFFECTS OF EXCLUDING RACIAL SUBGROUPS IN MULTIPLE CLASSIFICATION ANALYSIS

	A		B		C	
	Total Sample (N=2213)		Excluding Southern Segregated Blacks (N=2102)		Excluding Integrated and Northern Segregated Blacks (N=2068)	
Background Predictors	Eta^2	Beta^2	Eta^2	Beta^2	Eta^2	Beta^2
Socioeconomic level	.198	.071	.151	.082	.203	.076
Number of siblings	.111	.016	.073	.019	.107	.016
Broken home	.020	.001	.009	.001	.015	.000
Family relations	.026	.007	.023	.007	.024	.007
Religious preference	.052	.010	.041	.014	.050	.010
Family political preference	.017	.003	.018	.004	.014	.002
Community size	.028	.004	.019	.004	.034	.004
Race (Five-category)	.210	.101	.044	.015	.209	.103
Grand Mean	108.5		109.7		108.8	
Standard Deviation	12.5		11.1		12.4	
Proportion of total sum of squares explained by all eight variables simultaneously in MCA		.352		.221		.358

the other predictor variables excepting, of course, race. With no adjustments (Eta^2) we find that the proportion of variance explained by race drops from 21.0 percent to 4.4 percent when we exclude southern segregated blacks; the adjusted relationships (Beta^2) show a similarly drastic reduction.

But to what extent are these changes simply the result of cutting the number of black cases roughly in half? The answer can be seen in column C, which presents corresponding data with the "other half" of our black cases excluded. The figures in column C are strikingly similar to those for the whole sample in column A, and the similarity holds even when the background predictor is race. A glance at the means and standard deviations in Table 4-7 adds further evidence in support of the basic conclusion: it makes virtually no difference in the overall picture whether we exclude the half of our black cases who attend integrated or northern segregated schools, but a noticeable difference appears when we exclude those in southern segregated schools.

One further bit of data may be added here to summarize what we have learned from our analyses excluding racial subgroups. In Table 4-5, when we assigned proportions of the total QT variance to different combinations of predictors, we found that our race variable accounts for 9.4 percent of the variance after the effects of SEL and number of siblings are removed. A repetition of that analysis leaving out integrated blacks and those in northern segregated schools does not change the figure at all (it becomes 9.5 percent). But when the analysis is carried out excluding southern segregated blacks, race minus the effects of SEL and number of siblings accounts for only 1.6 percent of the QT variance. In short, it appears that race is an important predictor of QT scores for our sample *only* when we include black students in a handful of southern segregated schools; it does not predict well in southern integrated schools and in the North.

Five All-Black Schools in the South. In a monograph devoted to the effects of background, we have been reluctant to focus attention on schools. Moreover, the analysis of school effects will be fully reported in a later monograph. The inquiry into the nature of racial differences in our sample has led us, nevertheless, to focus on schools. We found first that the great majority of black respondents were located in only 9 of 87 sample schools. We also found that just 5 of these schools, located in the South, accounted for most of those black respondents who were very low in Quick Test scores. We therefore felt that some description of these 5 all-black southern schools and the differences among them should be reported in this volume.

TABLE 4-8

DESCRIPTION OF FIVE SOUTHERN SEGREGATED SCHOOLS

School	Actual Number of Respondents	Number of Weighted Cases	Mean Score on Quick Test
(1)	29	42	81.4
(2)	19	19	93.4
(3)	14	14	95.4
(4)	32	48	82.7
(5)	17	17	99.5

The 140 weighted cases in the category of southern segregated blacks are based on a total of 111 actual respondents, 29 of whom were given double weight in order to increase the overall accuracy of our sample (see Chapter 1). Table 4-8 presents the actual number of respondents, the number of weighted cases, and the mean QT scores for each of the five schools under consideration. Two schools (number 1 and number 4) contribute 90 of 140 weighted cases; moreover, mean QT scores for these schools are substantially lower than for the other three. These same two schools are in rural areas in the deep South, whereas the other three are in metropolitan areas. In short, other factors are confounded here with race, region, and segregation.

We expected to find these five schools drastically different from the average in expenditure per pupil, classroom size, and other dimensions commonly treated as indicators of school quality. All five, and especially the two rural ones, do tend to be below average on such organizational dimensions as principal's salary, mean level of teacher education, and the like. But these differences were not as striking as we initially expected. In fact, it is likely that even when we complete more refined analyses of school organizational data, our findings will not indicate that the school systems are primarily responsible for the distinctively different test performance of segregated black respondents in the South.

Summary Appraisal of Racial Difference in Test Scores. What can we conclude from this analysis of racial differences in Quick Test scores? Given racial subgroups that are small and confounded with region, community size, and segregation, any conclusions must be tentative. They may nevertheless be useful in their own right and suggest some possibilities for analyses based on larger samples than ours.

The most important and most general conclusion is that black respondents are not homogeneous in intelligence. On the contrary, the variance in Quick Test scores is a good deal larger for blacks than for whites in our sample. Moreover, it appears that black respondents can be grouped in three or four categories that differ meaningfully in QT scores: those in integrated schools scored highest; those in northern segregated schools were next highest; those in southern segregated schools were low, with by far the lowest scores occurring in two rural schools in the deep South.

The diversity in intelligence among these black groups led to a major decision for later analyses. Whenever we found indications of racial differences along other dimensions (such as attitudes, aspirations, and mental health), we have not simply summarized them as differences between blacks and whites. We have examined the black subgroups separately to see just where the differences are occurring. The diversity in QT scores among various black groups does not mean that other dimensions will follow the same pattern. It is, however, a question worth investigating carefully.

A second conclusion is that black respondents in integrated schools are very similar to whites in QT intelligence scores. Indeed, when we control SEL the difference between whites and integrated blacks is only 3.3 QT points. And, of course, we have not done a perfect job of controlling socioeconomic differences or school environment. Even though we have invested much in our measurement of SEL, we surely are not completely successful in our attempts to control it statistically. Moreover, we cannot say that the black students in integrated schools have received "equal" treatment throughout their school experience. Some spent their grade school years in segregated schools; and some spent their high school years in course programs that are largely segregated. In short, statistical controls for SEL and school experience are at best only approximations; and because of this, we cannot conclude that even the small difference of 3.3 QT points would remain if other factors were fully and completely controlled. (Incidentally, we find differences of this small magnitude occurring between other groups also; for example, the difference between whites in the Northeast and whites in the West, with SEL controlled, is 3.4 QT points.)

We do not suppose that our data represent an adequate basis for reaching firm conclusions about the effects of school integration and segregation. We have, it is true, found that southern segregated blacks are much lower in QT scores than integrated blacks in all regions. But to say that the low scores of the former group are the fault of their schools exclusively would ignore some other very important findings. For example, the southern segregated black respondents come from families that are far lower in SEL than any other minority grouping we have examined. Our interpretation would be that the black respondents in southern segregated schools are the products—indeed the victims—of a social system of segregation and discrimination far more pervasive than schools alone. It is quite beyond the scope of this study to determine what portion of the low scores of this group can be assigned to the effects of schools, the wider social milieu, the effects of pre-natal and post-natal malnutrition, and other factors shown by previous research to be important. Nor can we say with complete certainty that the racial differences we have observed are solely the products of environment—our data are certainly not precise enough to rule out all possibility of hereditary differences. But the most parsimonious explanation of these data, in our view, is in terms of the massive environmental differences that exist among the racial subgroups we have been examining.

Our conclusions about racial differences are limited, as we said they would be. And we have specifically avoided any firm conclusions about the causes of these differences. In spite of these uncertainties, and in spite of the sampling limitations acknowledged earlier, we feel that the data on test scores and race add evidence to the view that so-called "racial differences" are primarily—if not exclusively—differences in cultural and educational opportunity.

Prediction to Other Test Scores

Early in this chapter we examined several measures of intellectual ability which were included in our test battery. We noted that they tended to be highly correlated with each other and with the Quick Test. Now when we predict these tests using three major background factors (socioeconomic level, number of siblings, and race), we find essentially the same pattern of relationships as appeared with the QT. The results are summarized in Table 4-9; the main entry in each cell is the proportion of variance accounted for when the total sample is analyzed, whereas the entries in parentheses present parallel data omitting southern segregated blacks.

It is clear that the conclusions reached in our analyses of the QT can be applied as well to the GATB-J test of vocabulary and the Gates Test of Reading Comprehension. SEL and the five-category race variable are the most important predictors of test

TABLE 4-9

TESTS OF INTELLECTUAL ABILITY PREDICTED
FROM THREE BACKGROUND CHARACTERISTICS

Predictor(s)	Percent of Test Score Total Sum of Squares Explained by Predictor(s)[a]			
	Q.T.	GATB-J	Gates	Job Information
1. Socioeconomic Level	19.8 (15.1)	20.0 (16.2)	18.5 (14.2)	11.3 (8.1)
2. Number of Siblings	11.1 (7.2)	10.2 (7.0)	9.3 (5.6)	6.2 (4.3)
3. Race	20.9 (4.4)	16.8 (5.7)	21.6 (7.0)	11.0 (3.8)
4. SEL plus Number of Siblings plus Race	33.0 (19.4)	30.1 (21.1)	31.6 (19.2)	18.0 (11.3)

[a] Main entries describe total sample (N=2213 cases); parenthetical entries present data for sample minus southern segregated blacks (N=2102 cases).

scores when we consider the total sample; and when we add number of siblings in the predictive equation we can account for over 30 percent of the sample variance in test scores. However, when we exclude 111 cases in southern segregated schools, race becomes a far less important predictor, and we can account for only about 20 percent of the variance in test scores.

Prediction to the Job Information Test. The last column in Table 4-9 indicates the relationships between the three major background factors and scores on the Job Information Test. The pattern of relationships repeats, in attenuated form, what we found for other tests; job information is positively related to SEL, negatively related to family size, and lower among blacks than whites. Scores on our Job Information Test are also strongly and positively related to general intellectual ability, as measured by our other tests. The Quick Test, for example, has a product-moment correlation of .56 with the Job Information Test (see Table 4-1).

This high correlation between the Job Information Test and more general tests of intellectual ability raises the question mentioned earlier: Does the Job Information Test measure anything more than general intelligence? We cannot provide a complete answer to that question in this monograph, because a final verdict will require the use of longitudinal data. We can, however, determine whether there is any relationship between background factors and the Job Information Test that is not explainable as functioning through intelligence. In more operational terms, the question is: Can we predict Job Information scores any better using a combination of the QT and background factors than we can using the QT alone? Using a combination of the QT (bracketed into five categories), SEL, number of siblings, and race, we can account for 32.0 percent of the Job Information Test total variance; the QT alone accounts for 29.1 percent. (Repeating the analysis with southern segregated blacks excluded leads to the now familiar reduction in explained variance; QT plus background predictors accounts for 24.0 percent of the Job Information variance.)

Our conclusion is that nearly all of the impact of background factors on job information scores can be seen as operating "through" intelligence. This is not to say that family background is any less a causal factor in determining job information—it is rather to say that there is very little family background causation that operates independent of intelligence.

What can we say at this point about the Job Information Test and what it measures? It may be nothing more than a mediocre test of general intelligence; it is moderately correlated with other tests of intellectual ability, and its relationship with background factors can be interpreted as primarily a reflection of background influences on intelligence. But the test was initially developed to measure *changes* in job information during the high school years (see Bachman, et al., 1967), and its effectiveness as a change measure remains to be assessed. It is quite possible, for example, that different levels of family SEL will be related to changes in job information during high school. More exciting is the possibility that changes in job information will be found to differ between schools as a result of different school programs. In short, we have established thus far only that our Job Information Test includes a substantial component of general intelligence; whether it measures anything meaningful beyond this remains to be seen.

Intelligence as an Intervening Variable

In the preceding section we viewed intelligence as being in the middle of the following causal sequence: family background influences intelligence which in turn influences job information.

Such a variable in the middle of a causal sequence can be termed an *intervening variable.* In the chapters to follow, there are a number of occasions when it will be useful to consider the extent to which family background operates "through" intelligence as an intervening variable. Accordingly, we will grant a sort of special analytic status to the concept of intelligence, as measured by the Quick Test.

A model treating intelligence as an intervening variable is presented in Figure 4-12. In applying this model, we are especially interested in distinguishing the extent to which family background effects operate through intelligence (Arrow B) and independent of intelligence (Arrow C). Let us consider this distinction in operational terms. First, the independent effect of background characteristics (Arrow C) consists of the *increment* in explained variance when background characteristics are added to intelligence as predictors of a criterion. Second, the predictive overlap between background characteristics (as a group) and intelligence—i.e., the variance in the criterion which could be explained by either background factors or intelligence—is *interpreted* as background characteristics operating through the intervening variable intelligence (Arrow B). This is clearly a theoretically-based interpretation, not a derivation from data; the statistics would be the same if the predictive overlap were interpreted as intelligence operating through background characteristics, but that would be theoretical nonsense.

Also of interest to us is the unique effect of intelligence (Arrow A)—the effect that cannot be traced back to background characteristics (as we've measured them). Operationally, this effect consists of the increment in explained variance when intelligence is added to background characteristics as predictors of the criterion.

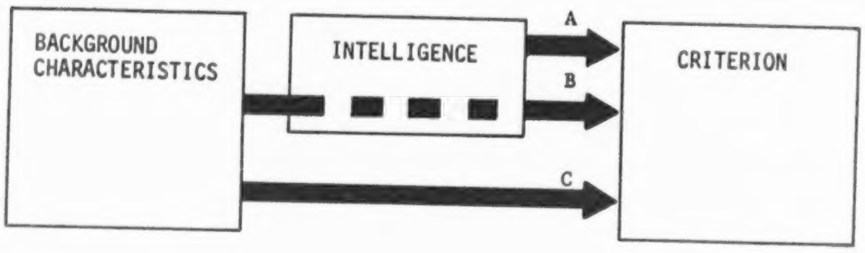
Summary

In this chapter we have related family background factors to tests of intellectual ability. We have also dealt extensively with (a) Multiple Classification Analysis—a technique to be used throughout the rest of this monograph, (b) racial differences in test scores—which turn out really to be "racial-regional-segregational" differences, and (c) the conceptualization of intelligence as an intervening variable between family background and criterion dimensions.

We examined three different tests of intellectual ability: the Quick Test, an individually-administered test of general intelli-

FIGURE 4-12

MODEL SUMMARIZING THE EFFECTS OF
BACKGROUND CHARACTERISTICS AND INTELLIGENCE



Arrow A:	Effects of intelligence that are independent of the effects of background characteristics
Arrow B:	Joint or "overlapping" effects of background characteristics and intelligence; we interpret these as effects of background factors operating through intelligence as an intervening variable
Arrow C:	Effects of background characteristics that are independent of the effects of intelligence
Arrows A+B:	Total effects of intelligence
Arrows B+C:	Total effects of background characteristics
Arrows A+B+C:	Total effects of background characteristics plus intelligence

Note: Our data concerning the Job Information Test can be used to illustrate the way this model operates. Intelligence (QT) alone can account for 29.1 percent of the total sum of squares in the Job Information Test (Arrows A plus B). The prediction from background factors (socioeconomic level, number of siblings, and race) accounts for 18.0 percent of the sum of squares (Arrows B plus C). The prediction from background factors and intelligence jointly accounts for 32.0 percent of the sum of squares (Arrows A plus B plus C). These values, and derivations from them, are summarized below:

A+B+C = 32.0%

A+B = 29.1%

B+C = 18.0%

Therefore:

A = 14.0%

B = 15.1%

C = 2.9%

gence; a portion of the Gates Reading Survey—a group-administered test of reading achievement; and Part J of the General Aptitude Test Battery, a group-administered test of vocabulary. While these three tests appear to be different, we found them to be highly intercorrelated (product-moment correlations from .66 to .71). We also found them to be quite similar in their patterns of relationship to family background dimensions.

Socioeconomic level is a strong and consistent predictor of test scores. A much weaker predictor, especially with SEL controlled, is family size or number of siblings. The one other important predictor was found to be race, but our conclusions here are more complicated. Black students in southern segregated schools are far below whites and other blacks in their test scores. (Region is not, in other respects, an important predictor of scores.) Black respondents in integrated schools score close to the average for all whites, and the similarity increases when SEL is controlled.

Our ability to reach conclusions about racial differences is limited by our small sample of black students and by their clustering in a few schools; however, for our sample at least, it appears that racial differences are primarily associated with differences in cultural and educational opportunity.

Chapter 5

SELF-CONCEPT OF SCHOOL ABILITY

How an individual sees himself is a central feature of his personality. A self-concept can be favorable or unfavorable, realistic or unrealistic. But no matter what the self-concept, it is an important determinant of what a person thinks he can do, and thus of what he attempts to do and succeeds in doing.

But the term self-concept is broad and elusive. Social scientists share some agreement about what it means at a general level and share the view that it is an extremely important concept in the study of an individual's personality. But when it comes to a more precise definition—especially an operational one—agreement is difficult to find. Our own preference is to focus on specific *dimensions* of the self-concept, rather than treating self-concept as a totality. We acknowledge that any particular dimension is likely to be more descriptive of some individuals than of others. On the other hand, it does seem possible to define some dimensions of self-concept that are prominent in the thinking of large numbers of individuals. For young men in high school, one such dimension is the self-concept of school ability.

Most of our subjects have spent far more time in schools than in any other organizational environment. Their school "work" is in many ways analogous to the work roles of adults. But school work stresses ability and evaluation of performance to a degree that is matched by few work roles. In a very literal sense, the student is constantly being put to the test; a week seldom passes without some sort of quiz or exam. Like it or not, the student can scarcely avoid applying his academic abilities to some degree; and, like it or not, he must undergo evaluation of those abilities by teachers, peers, and himself.

Students are told by adult society that academic performance is a valuable—indeed, essential—key to later vocational success. And the students get the message. In questionnaire responses they strongly endorse academic values such as studying hard and trying for good grades. Perhaps more dramatic are their answers to the interview question: "If you had a son, how would you like him to be different from you?" By far the most prominent re-

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sponses involve academic and intellectual skills. More than one-third of our subjects say they would prefer their sons to be smarter, more intelligent, and better students than they consider themselves to be.

In short, it seems clear that self-concept of school ability is a dimension of great consequence to most young men. It is closely related to their success in the school environment. And it signifies their potential for longer-range success in a culture that places a premium on intellectual skill.

A Measure of School Ability Self-Concept

Three interview questions dealing with academic ability are shown in Table 5-1. The first two questions, which inquire about self-concept of school ability and self-concept of intelligence, have very similar distributions of answers; about half the respondents see themselves as slightly above average, and only one-sixth rate themselves at all below average. The third question which asks more specifically about the ability to read leads to a realistic lowering of self-ratings; fully one-third of the respondents rank themselves in the below-average categories. (The response scale was deliberately designed to make it impossible for a respondent to rate himself simply as average—he had to choose a position on either side of that midpoint.)

TABLE 5-1

INTERVIEW MEASURES OF ACADEMIC ABILITY SELF-CONCEPT

	How do you rate yourself in school ability compared with those in your grade in school?	How intelligent do you think you are, compared with other boys your age?	How good a reader do you think you are, compared with other boys your age?
Far above average	5%	7%	8%
Above average	31%	25%	26%
Slightly above average	47%	52%	33%
Slightly below average	15%	14%	23%
Below average	2%	2%	7%
Far below average	---[a]	---[a]	2%

[a] Less than 0.5%.

A *self-concept of school ability* index was formed by combining equally the three items described above. Product-moment correlations among the three questions range from .29 (school ability versus reading ability) to .53 (school ability versus intelligence); correlations between items and the index range from .74 to .81.

Background Factors Related to Self-Concept of School Ability

Table 5-2 relates the eight background dimensions, and also the Quick Test of intelligence, to the self-concept of school ability. The first two columns of the table present Eta and Eta^2 statistics summarizing the unadjusted relationship between each predictor and the criterion.

Intelligence. Intelligence, as measured by the QT, is clearly the strongest predictor of the self-concept of school ability (Eta = .46). The pattern of relationship is shown by the solid line in Figure 5-1. This finding comes as no surprise, but it is nonetheless encouraging for two reasons: it suggests that our respondents' self-concepts of school ability are somewhat consistent with reality, and it provides a degree of validation for our self-concept measure.[1]

Socioeconomic Level. The second strongest predictor of school ability self-concept is socioeconomic level (Eta = .33). Such a relationship was, of course, anticipated; the preceding chapter demonstrated that SEL is an important predictor of the QT, and we have just noted that the QT is strongly related to self-concept of school ability. The more interesting issue is whether SEL has any predictive value above and beyond its association with the QT. (This is the same basic question we raised in the preceding chapter when we asked whether any part of the relationship between background factors and the Job Information Test is not explainable as functioning through intelligence.)

Data bearing on this issue are presented in the remaining columns of Table 5-2. The third and fourth columns show the results of a Multiple Classification Analysis (MCA) using all eight background factors as predictors to self-concept of school ability. The fifth and sixth columns present results from a parallel MCA, except that an additional predictor—the Quick Test—is combined with the eight background factors. A comparison of the two MCA's

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[1] Additional evidence bearing on the validity of this measure of self-concept of school ability may be found in Appendix D. The measure shows product-moment correlations of .48 with grades (self-report), .34 with college plans, and .36 with status of aspired occupation.

TABLE 5-2

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO SELF CONCEPT OF SCHOOL ABILITY

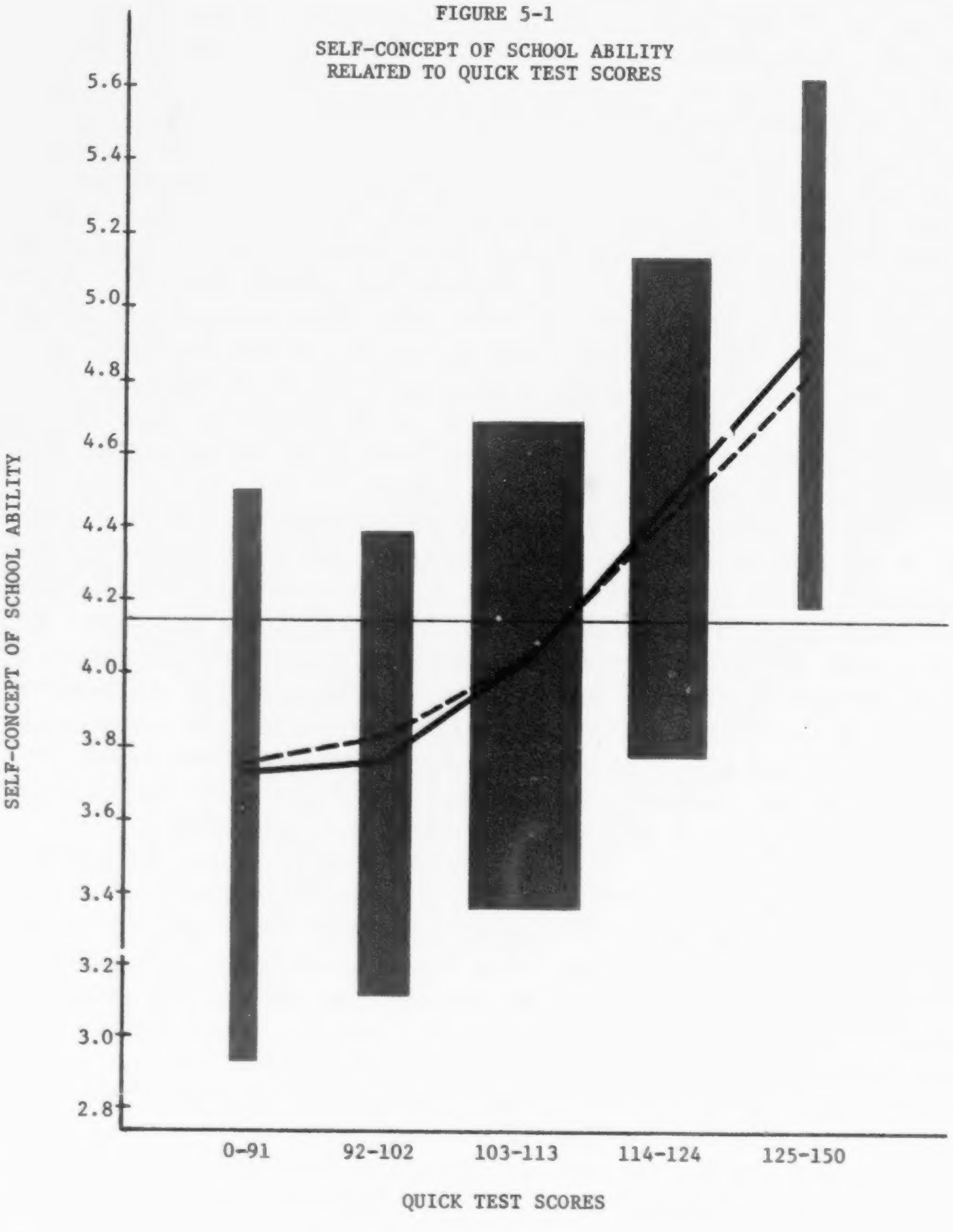
	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.33	.106	.26	.069	.16	.026
Number of Siblings	.21	.045	.13	.018	.10	.010
Broken Home	.07	.005	.01	.000	.01	.000
Family Relations	.19	.036	.14	.018	.12	.014
Religious Preference	.18	.031	.09	.009	.07	.005
Family Political Preference	.13	.018	.09	.008	.08	.006
Community Size	.11	.012	.03	.001	.03	.001
Race (Five-Category)	.06	.003	.07	.006	.14	.020
Quick Test of Intelligence	.46	.213			.40	.163
			R = .386		R = .526	
			R^2 = .149		R^2 = .277	
			Percent Variance Explained = 16.4		Percent Variance Explained = 29.1	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

FIGURE 5-1

SELF-CONCEPT OF SCHOOL ABILITY
RELATED TO QUICK TEST SCORES



▬ connects unadjusted subgroup means (Eta = .46).
--- connects means adjusted for family background factors (Beta = .40).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.

Note: The reason for presenting adjusted means is discussed later in the text.

for any of the background factors indicates the change in predictive value that occurs when the QT is added to the set of predictors.

The predictive value of SEL, as the data in Table 5-2 indicate, is sharply reduced but not eliminated when the QT is added to the predictors. The relationships are presented graphically in Figure 5-2. The solid line indicates the unadjusted relationship; as SEL increases there is a steady corresponding increase in self-concept of school ability. The dashed line shows that this relationship is moderately changed when the other seven background predictors are added to the equation. The dotted line indicates the effect that remains after taking account of intelligence (QT) plus the other background predictors; in this case the strength of the relationship is markedly reduced (the slope of the dotted line is about half as steep as the solid line.)[2]

Family Size. Table 5-2 shows the relationship between number of siblings and self-concept of school ability (Eta = .21); the table also indicates that this modest relationship is reduced somewhat when other background factors and intelligence are taken into account. Figure 5-3 presents these relationships. There is a fairly steady decline in self-concept of school ability as number of siblings increases (solid line); the strength of this association is reduced when SEL and other background factors are taken into account (dashed line), and it is further attenuated when intelligence is considered part of the set of predictors (dotted line).

Family Relations. Table 5-2 and Figure 5-4 present the unadjusted and adjusted relationships between self-concept of school ability and our measure of family relations. The effects of the family relations variable are about equal in strength to the effects of family size (Eta = .19); however, because the family relations measure is not strongly correlated with the other background measures and intelligence, the adjusted relationships show a bit less change. In other words, there appears to be a small positive relationship between getting along well with one's parents and having a self-concept of high scholastic ability, and this relationship is largely independent of other background factors and intelligence.

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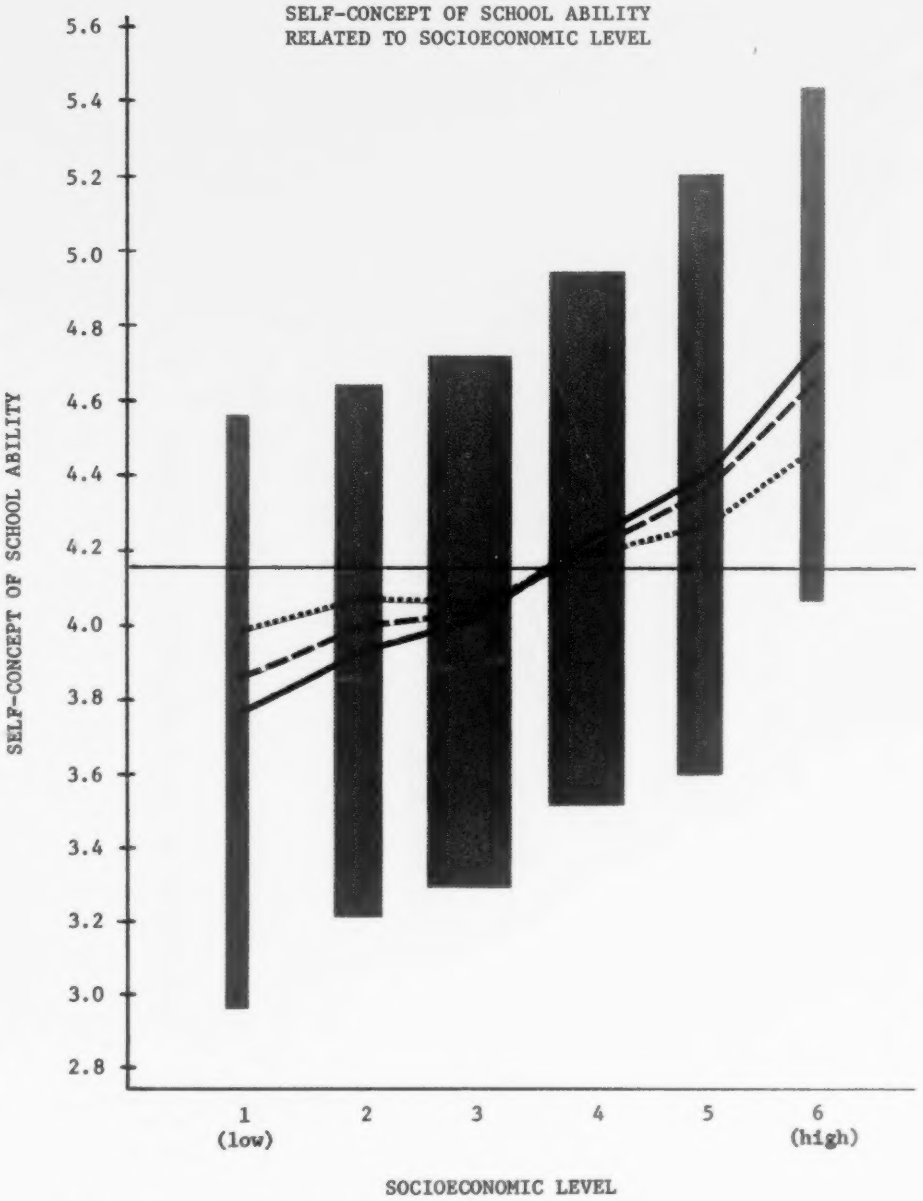
[2] We consider it less relevant theoretically to ask how much of the effect of intelligence (QT) on self-concept of school ability operates apart from SEL and other background dimensions. For the sake of completeness, however, we have included that relationship in Figure 5-1; the dashed line indicates the relationship assigned to the QT by the Multiple Classification Analysis using nine predictors. Clearly there is little change in the strong correlation between intelligence and self-concept of school ability when the background dimensions and SEL are controlled.

FIGURE 5-2

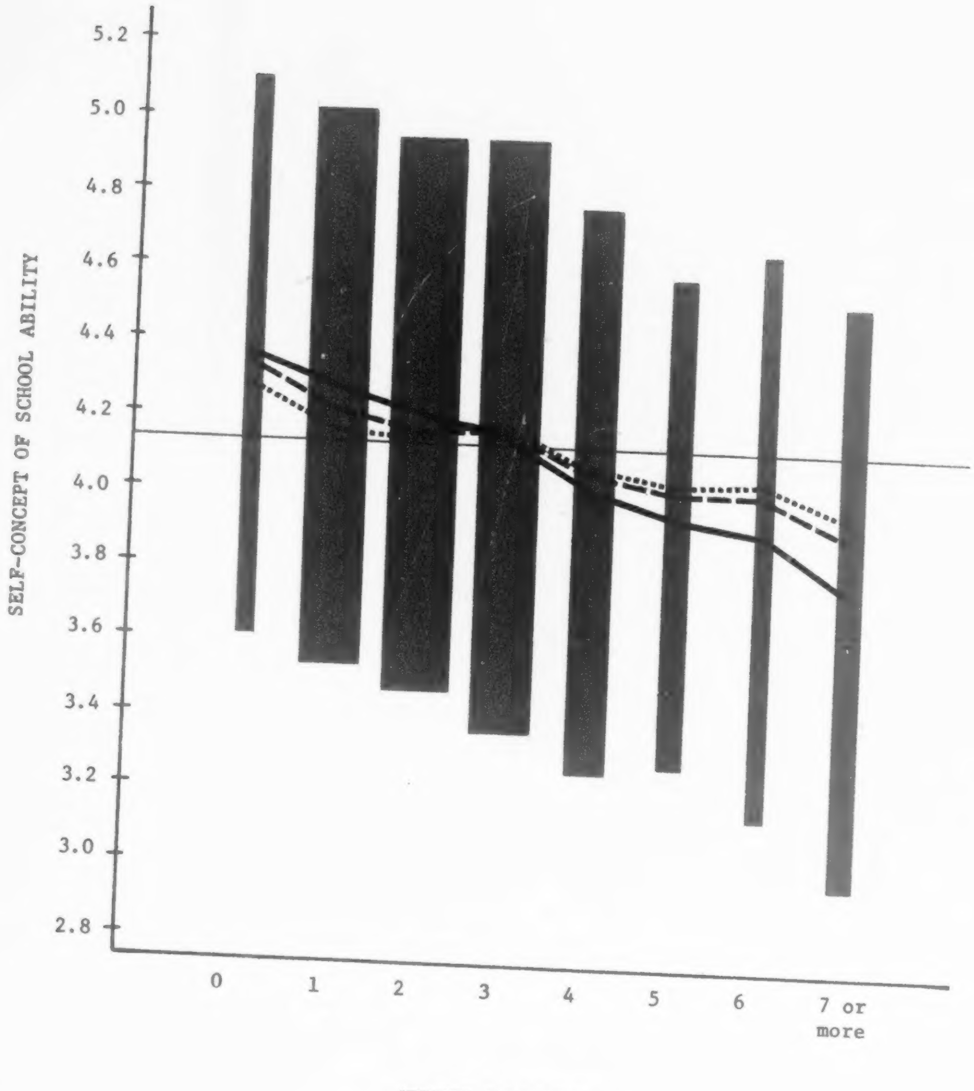
SELF-CONCEPT OF SCHOOL ABILITY
RELATED TO SOCIOECONOMIC LEVEL



━━ connects unadjusted subgroup means (Eta = .33).
━ ━ connects means adjusted for family background factors (Beta = .26).
······· connects means adjusted for family background plus intelligence (Beta = .16).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.

Note: The format used in this figure will be repeated throughout the remaining chapters. The reader is urged to consult Appendix E, which discusses this format and its rationale. Data corresponding to all figures are also presented in Appendix E.

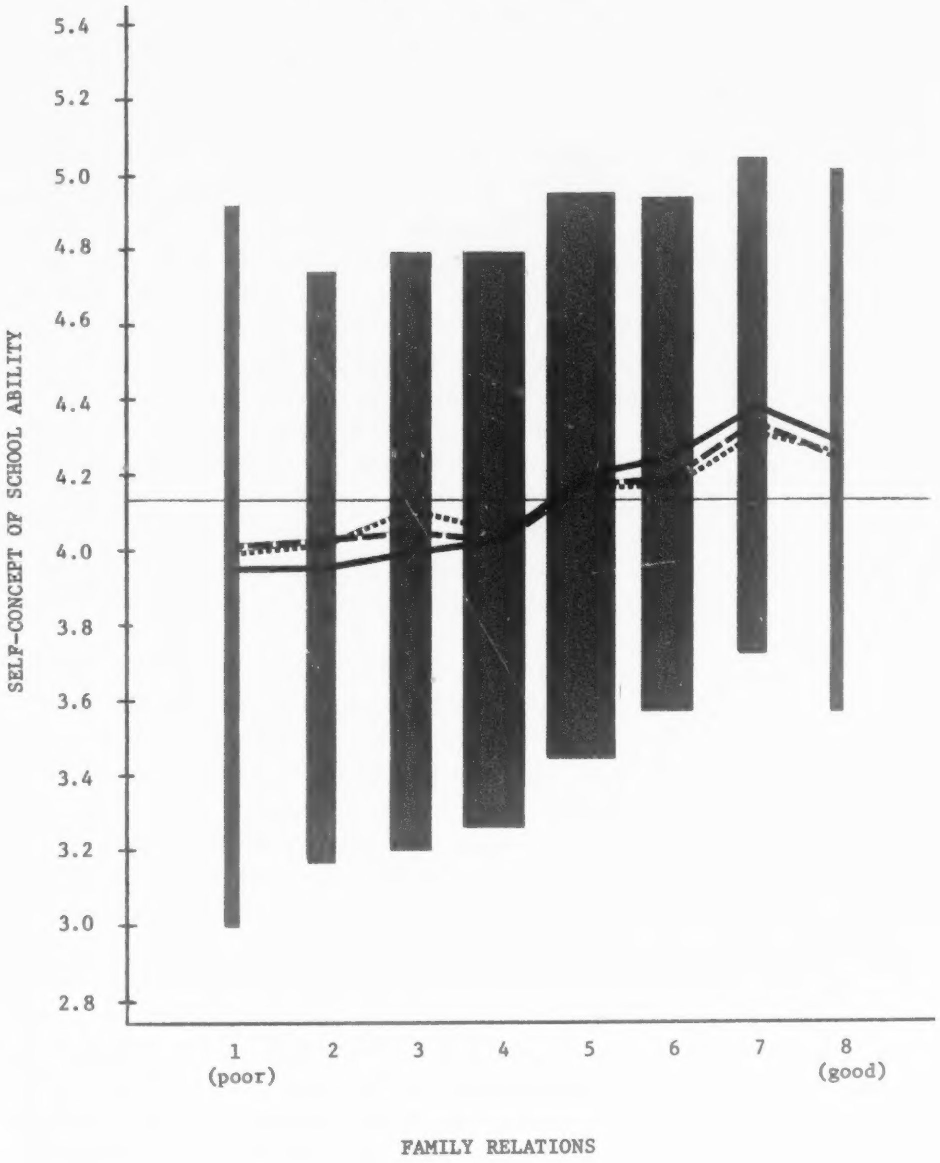
FIGURE 5-3
SELF-CONCEPT OF SCHOOL ABILITY
RELATED TO FAMILY SIZE



▬ connects unadjusted subgroup means (Eta = .21).
▬ ▬ connects means adjusted for family background factors (Beta = .13).
······ connects means adjusted for family background plus intelligence (Beta = .10).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 5-4

SELF-CONCEPT OF SCHOOL ABILITY
RELATED TO FAMILY RELATIONS



━━━ connects unadjusted subgroup means (Eta = .19).
‒ ‒ ‒ connects means adjusted for family background factors (Beta = .14).
┅┅┅ connects means adjusted for family background plus intelligence (Beta = .12).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

A point made earlier bears repeating here. The family relations measure is the only background dimension that is highly subjective in nature. Its correlation with a highly subjective criterion, self-concept of school ability, must be interpreted with caution. In the next chapters we will deal at greater length with such problems posed by the measure of family relations.

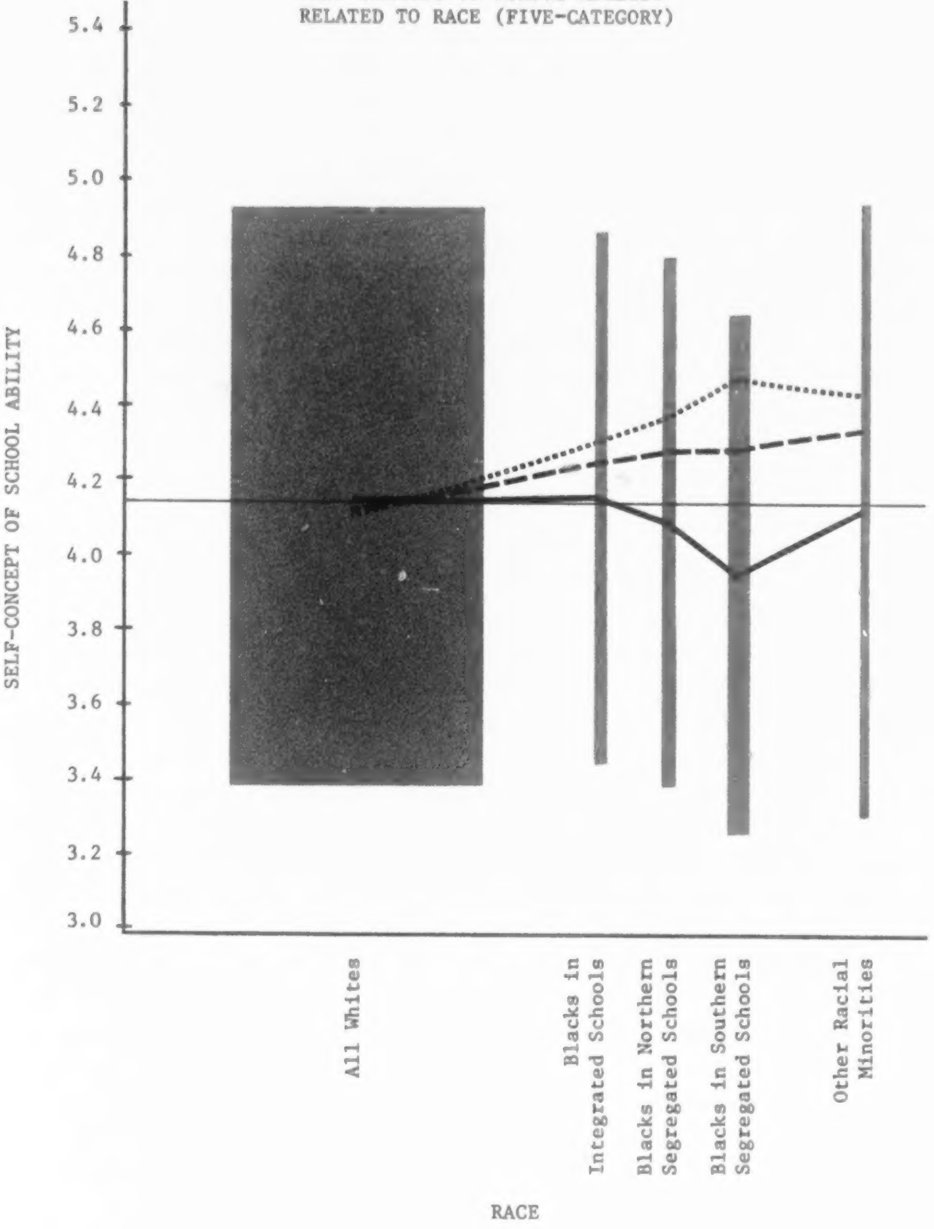
Race. The data in Table 5-2 that involve our five-category race variable provide something of a paradox: the effect after adjustments for intelligence (QT) and other background factors is much larger (Beta = .14) than the unadjusted effect (Eta = .06). This is not the case for any other predictor in Table 5-2. It represents what Andrews, *et al.*, (1967), call the "unmasking" effect of Multiple Classification Analysis. Figure 5-5 illustrates this effect. With nothing else controlled (Figure 5-5, solid line), integrated blacks are identical to whites in their self-concept of school ability, and southern segregated blacks are somewhat lower than these groups. But when we control for SEL and other background factors (dashed line), this effect is reversed somewhat. When we also control for QT (dotted line), there is a pronounced tendency for blacks, especially those in southern segregated schools, to be relatively higher than whites in self-concept of school ability.

Now we are faced with an interesting problem of interpretation. Based on the unadjusted relationship (shown by the solid line in Figure 5-5), we might conclude that southern segregated blacks have a relatively low self-image when it comes to school ability. However, the adjusted relationships which take into account measured intelligence and family background (dotted line in Figure 5-5) suggest that blacks in general, and particularly those in southern segregated schools, tend if anything to overestimate their academic ability.

One of the things that makes interpretation difficult is the very nature of our measure of self-concept of school ability. Respondents were asked to rate themselves "compared with those in your grade in school" or "compared with other boys your age." In principle, the appropriate reference group would be a very broad cross-section of young men; however, to the extent that respondents actually used friends and acquaintances as their reference group, their answers may contain some built-in controls for socioeconomic level and intellectual ability. For example, a black respondent in a southern segregated school may quite correctly see himself as above average in scholastic ability compared with his friends, yet he may be closer to the average when compared with our total sample. In this example, the respondent has already

FIGURE 5-5

SELF CONCEPT OF SCHOOL ABILITY
RELATED TO RACE (FIVE-CATEGORY)



—— connects unadjusted subgroup means (Eta = .06).
– – connects means adjusted for family background factors (Beta = .07).
······ connects means adjusted for family background plus intelligence (Beta = .14).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

matched himself with others of roughly equal socioeconomic level and intellectual ability; the adjustments provided by Multiple Classification Analysis in such a case might actually overcompensate.

Given only a self-concept measure that is relative (i.e., dependent on a reference group), and by its very definition subjective, it would be difficult to decide whether black respondents tend to over-estimate or under-estimate their scholastic ability. In later chapters, however, we will examine criteria such as plans for college and status of aspired occupation. Such dimensions, while still somewhat subjective, do not involve some of the reference group problems mentioned above. They nevertheless show the same sort of unmasking effect that we noted earlier—black respondents show lower aspirations than whites until we take account of family background and Quick Test scores, and then they show relatively higher aspirations than whites.

Other Background Characteristics. We have just discussed four background dimensions: socioeconomic level, family size, family relations, and race. These, in addition to intelligence, show the strongest adjusted effects on self-concept of school ability. The remaining four dimensions each show some small unadjusted relationship; however, these effects (like the corresponding ones in the preceding chapter relating to the Quick Test) are largely interpretable in terms of socioeconomic level.

Two additional multiple classification analyses were carried out parallel to those in Table 5-2, except that these analyses omitted the following predictor dimensions: broken home, religious preference, family political preference, and community size. The removal of these four predictors led to about a 1 percent reduction in the variance explained; in other words, these four background variables taken together can account for only about 1 percent additional variance in self-concept of school ability. In this chapter, and in those that follow, we will devote little or no discussion to those background predictors that show such small *adjusted* effects on a criterion.

Intelligence Versus Other Background Predictors of Self-Concept of School Ability

The issue of intelligence as an intervening variable was introduced in the preceding chapter. The issue is very appropriate to the present chapter on self-concept of school ability; we have found that intelligence is the strongest predictor of this criterion, but we also have indications that family background affects this criterion independently of intelligence. Now, following the procedures introduced in Chapter 4, we will try to get a clearer picture of the extent to which background effects on self-concept of school ability operate both through and independently of intelligence.

Applying the model presented in Figure 4-12, and using data from Table 5-2, we can explain a total of 29.1 percent of the variance in self-concept of school ability as follows: 12.7 percent represents the independent effects of measured intelligence (arrow A), 2.8 percent represents the independent effects of background characteristics (arrow C), and 8.6 percent represents the operation of background factors through intelligence (arrow B).

In short, self-concept of school ability is influenced considerably by intelligence, but much of that influence can be traced back to family background. In addition, some family background effects remain above and beyond those which operate through intelligence.

Summary

The ability to do well in school is a matter of great consequence to a young man. Society tells him that academic performance is essential to his later vocational success, and he accepts that judgment. Accordingly, his self-concept of school ability is likely to be an important part of his personality.

Our subjects generally rated themselves high in scholastic abilities, including intelligence and reading skill. On response scales that forced an individual to choose a position on either side of the midpoint, only one-sixth to one-third of the respondents rated themselves below average. This may reflect a certain defensiveness on the part of some; but considering the significance of this dimension, some degree of defensiveness may be necessary to maintain self-esteem.

The most direct determinant of a boy's self-concept of school ability is his actual intelligence (Eta = .46). But behind intelligence lie family background factors that are also important predictors. Self-concept of school ability is highest when family socioeconomic level is high, number of siblings is few, and family relations are reported as good. Much of the effect of these background factors is interpreted as operating via their impact on intelligence, but some of the effect is independent of measured intelligence.

Southern segregated blacks show slightly lower self-concepts of school ability than do whites; however, once we account for family background and measured intelligence, it no longer appears that they underrate their academic ability—in fact, their self-concepts on this dimension are if anything relatively higher than those of whites.

Chapter 6

MOTIVES

Motives—tendencies to strive for certain goals or outcomes—are generally thought to be among an individual's more stable characteristics. Deeply ingrained and formed over a long period of time, motives seem especially likely to reflect the influence of family background. In this chapter we will consider a number of motives as they relate to background factors.

We will examine motives toward school, needs for self-development and self-utilization, test anxiety (sometimes interpreted as the need to avoid failure), and the need for social approval. We will see that one measure—family relations—correlates fairly well with each of these motive dimensions, but the correlations are somewhat troublesome to interpret.

Before turning to the above topics, let us note two motives that will *not* receive detailed discussion in this chapter—the need for achievement and the need for affiliation. Early in the interview, respondents were asked to tell three stories in response to verbal cues from the Thematic Apperception Test.[1] The interview procedures followed those used by Gurin, et al., (1960); the use of verbal stems instead of pictures was dictated by the need to avoid the social-class or racial bias which are intrinsic to the standard TAT picture cards. The stories were scored for achievement and affiliation imagery. (See Bachman, et al., 1967, for a description of the scoring procedures.)

Essentially zero intercorrelations were found among the achievement scores for the three different stories, and the same was true for the affiliation scores. Total scores for the two motive dimensions were computed, and multiple classification analyses were carried out attempting to predict each of the motive dimensions from family background factors. The results were completely disappointing. Family background factors plus intelligence were able to predict a total of 2 percent of the variance in need for affiliation, and less than 1 percent of the variance in need for achievement.

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[1] The three verbal stems were: two men in a shop working on a machine; a man working alone in his office at night; a young man talking about something important with an older man (Atkinson, 1958).

This lack of positive findings should not, in our view, be taken as clear evidence that needs for achievement and affiliation are unaffected by the background dimensions we are examining. It is far more likely that the motive measures we used lack validity. In addition to the absence of inter-story correlation and the lack of relationship with family background measures, we find that the motive measures are not meaningfully correlated with any other criterion dimensions (see Appendix D).

It was to be expected, of course, that some of our measures would not prove successful. In spite of considerable effort by the interviewers, the respondents, and the scorers, these projective measures were not effective in our application. The reasons for this failure in measurement are not clear; methodological explanations might focus on the use of verbal cues rather than pictures, or the fact that the respondents had to dictate their stories to an interviewer rather than writing them. In any event, it is regrettable that the loss involves so important a concept as the need for achievement.

School Motivation

One portion of the group-administered questionnaire contained 27 items dealing with attitudes or motivation toward school. Examination of the intercorrelations among these items in a pilot study led to the development of one index based on 15 items and another based on 8 items.

The first index, which we have termed *positive school attitudes*, contains items that stress the intrinsic value of education; for example, "I think school is important, not only for the practical value, but because learning itself is very worthwhile." Table 6-1 presents the complete set of items and response distributions. Every one of the items is endorsed by at least three-quarters of the respondents, who say they feel this way either "pretty much" or "very much." It should be noted that the items possess a great deal of social acceptability—they sound like the right thing to say, and it may be that some of our respondents are inclined to tell us what they think we want to hear. Taken at face value, the data certainly suggest that most tenth-grade boys have favorable attitudes toward school.

The second index, termed *negative school attitudes*, consists of eight items ranging from general dissatisfaction ("School is very boring for me, and I'm not learning what I feel is important") to a devaluation of school in comparison to other sources of experience ("A real education comes from your own experience and not

TABLE 6-1

POSITIVE SCHOOL ATTITUDES

	Percentage Frequencies I feel this way:			
Item Content	Very much	Pretty much	A little	Not at all
I feel satisfied with school because I learn more about things I want to know	37	41	17	4
Education has a high value because knowing a lot is important to me	56	32	9	2
I think this school is a real chance for me; it can make a real difference in my life	48	34	13	4
Even if I could get a very good job at present, I'd still choose to stay in school and get my education	60	25	10	5
I have put a great deal of myself into some things at school because they have special meaning or interest for me.	32	42	21	3
I enjoy school because it gives me a chance to learn many interesting things	31	45	20	3
School gives me a chance to be with people my own age and do a lot of things that are fun	45	38	13	2
I think school is important, not only for the practical value, but because learning itself is very worthwhile.	50	36	11	2
All people should have at least a high school education.	69	22	5	2
I enjoy being in school because I feel I'm doing something that is really worthwhile	41	37	18	3
An education is a worthwhile thing in life, even if it doesn't help you get a job	45	34	14	6
I like school because I am improving my ability to think and solve problems	39	42	15	3
I believe an education will help me to be a mature adult	53	32	10	3
I like school because I am learning the things I will need to know to be a good citizen.	36	41	18	4
School is satisfying to me because it gives me a sense of accomplishment	32	42	21	3

from the things you learn in school"). The items indicating general dissatisfaction received little endorsement, on the whole, while the items stressing the relative superiority of experience outside school were endorsed more often. Table 6-2 presents the eight items and response distributions.

TABLE 6-2

NEGATIVE SCHOOL ATTITUDES

Item Content	Percentage Frequencies I feel this way:			
	Very much (1)	Pretty much (2)	A little (3)	Not at all (4)
Instead of being in this school, I wish I were out working.	6	9	32	52
School is very boring for me, and I'm not learning what I feel is important	8	14	37	40
If I could get the job I wanted, I'd quit school without hesitating	9	10	19	61
A real education comes from your own experience and not from the things you learn in school	11	21	44	22
I am in school in order to get a job; I don't need the education and training	9	11	28	51
I can satisfy my curiosity better by the things I learn outside of school than by the things I learn here at school.	13	25	42	19
I feel I can learn more from a very good job than I can here at school.	8	14	37	40
I feel the things I do at school waste my time more than the things I do outside of school.	7	12	34	46

The two scales are, of course, inversely related; the product-moment correlation between them is -.51. Thus in much of what follows we will be able to talk about both scales together, recognizing that a relationship for one will appear in the opposite direction for the other.

Background Factors Related to School Motivation. The eight background dimensions plus the Quick Test of intelligence are shown in relation to positive school attitudes in Table 6-3, and negative school attitudes in Table 6-4. For both criterion dimensions the strongest predictor is the measure of family relations (Eta values are .35 and .38). The pattern is quite straightforward; the better the family relations a boy reports, the more positive (and the less negative) are his statements about school.

TABLE 6-3

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO POSITIVE SCHOOL ATTITUDES

	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.10	.011	.08	.006	.07	.004
Number of Siblings	.10	.010	.08	.006	.07	.005
Broken Home	.09	.008	.06	.004	.06	.004
Family Relations	.35	.125	.34	.113	.33	.111
Religious Preference	.13	.018	.08	.007	.08	.007
Family Political Preference	.06	.004	.03	.001	.03	.001
Community Size	.06	.004	.07	.005	.07	.004
Race (Five-Category)	.07	.005	.11	.013	.12	.013
Quick Test of Intelligence	.10	.010			.06	.004
			R = .382 R^2 = .146		R = .385 R^2 = .148	
			Percent Variance Explained = 16.1		Percent Variance Explained = 16.5	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

TABLE 6-4

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO NEGATIVE SCHOOL ATTITUDES

	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
BACKGROUND PREDICTORS:	Eta	Eta^2	Beta	$Beta^2$	Beta	$Beta^2$
Socioeconomic Level	.21	.045	.13	.017	.09	.008
Number of Siblings	.16	.027	.07	.005	.05	.003
Broken Home	.07	.005	.01	.001	.00	.000
Family Relations	.38	.147	.35	.125	.34	.119
Religious Preference	.15	.022	.07	.005	.07	.004
Family Political Preference	.08	.007	.04	.001	.03	.001
Community Size	.08	.006	.04	.002	.03	.001
Race (Five-Category)	.10	.010	.07	.005	.10	.009
Quick Test of Intelligence	.25	.060			.18	.032
			R = .420		R = .444	
			R^2= .176		R^2= .198	
			Percent Variance Explained = 19.1		Percent Variance Explained = 21.3	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

The remaining background factors tend to show clearer relationships with negative school attitudes than with positive ones. Socioeconomic level shows a linear effect; the lower the SEL, the more negative school attitudes a boy reports (Eta = .21). Family size shows a curvilinear effect; as the number of siblings increases beyond two, negative school attitudes become increasingly prominent (Eta = .16).

Intelligence, as measured by the Quick Test, also shows a stronger correlation with negative than with positive school attitudes (Eta = .25). Not surprisingly, the lower a boy's intelligence, the more negative school attitudes he expresses. When we look at positive school attitudes, however, there is little association with intelligence (Eta = .10). This may help us clarify the distinction between the two school attitudes scales. It appears that bright boys are no more likely than others to say that school is a wonderfully satisfying place to be, but they are less likely to consider school boring and a waste of their time. In this respect, our school attitude measures, which we have somewhat arbitrarily classified as motives, may simply reflect some important realities. All students are taught that school is a valuable experience and education is worthwhile in its own right. Nevertheless, some students of more limited ability may often find that the school is not organized to fit their needs and abilities; as a result, they report that this "valuable" experience is also frustrating and dissatisfying.

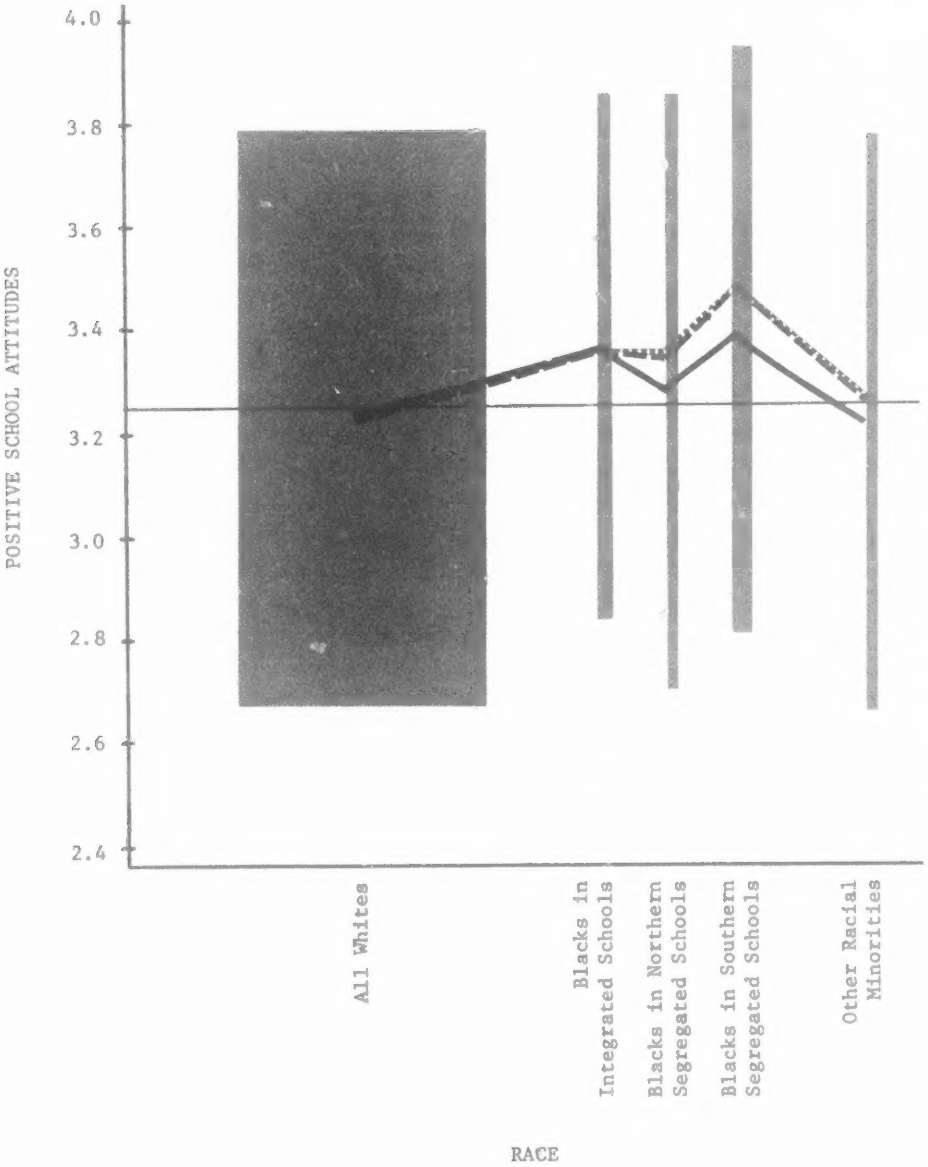
Figure 6-1 presents positive and negative school attitudes as they relate to race. Blacks in integrated schools show consistently above average school attitudes; before and after adjustments for other variables, they are high in positive school attitudes and low in negative school attitudes. Blacks in southern segregated schools are high in positive school attitudes. They are also high in negative attitudes, until the Multiple Classification Analysis compares them with others who are similar in socioeconomic level and Quick Test scores. Given this adjustment, the southern segregated blacks appear relatively low in negative school attitudes.

Needs for Self-Development and Self-Utilization

The needs for self-development and self-utilization can be viewed as two components of the need for self-actualization. In an attempt to measure these constructs, as defined by French (French and Kahn, 1962; French, 1963), Judith Long developed two questionnaire scales for use in our study (Long, 1967). Examples

FIGURE 6-1A

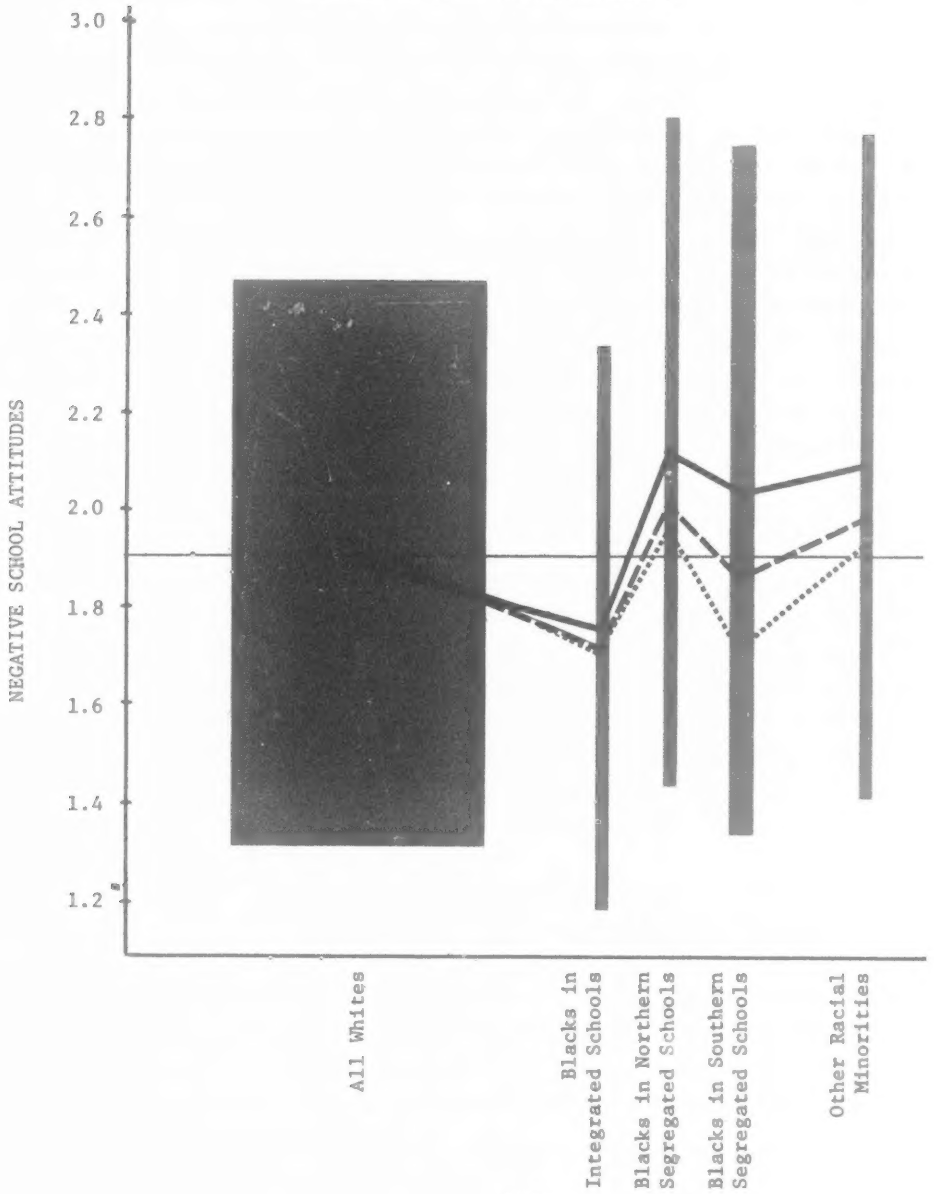
POSITIVE SCHOOL ATTITUDES
RELATED TO RACE (FIVE-CATEGORY)



▬▬ connects unadjusted subgroup means (Eta = .07).
▬ ▬ connects means adjusted for family background factors (Beta = .11).
┅┅ connects means adjusted for family background plus intelligence (Beta = .12).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 6-1B

NEGATIVE SCHOOL ATTITUDES
RELATED TO RACE (FIVE-CATEGORY)



▬▬ connects unadjusted subgroup means (Eta = .10).
— — connects means adjusted for family background factors (Beta = .07).
······ connects means adjusted for family background plus intelligence (Beta = .10).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

of self-development items are: In sports, I try to improve my skill, rather than just having a good time; I would be unhappy in a job where I didn't grow and develop. Examples of self-utilization items are: The job I would like to have is one where I am doing what I am good at; I am afraid that if I don't keep in practice I will lose my skills. A complete listing of the items in this scale is presented elsewhere (Bachman, et al., 1967; see also Arscott, 1968, for items plus response distributions).

The product-moment correlation between the two scales is .72. The two scales also display nearly identical relationships with background dimensions. Thus it is doubtful that the scales have succeeded in measuring two separate components of self-actualization needs. At least for our present purposes, it will be convenient to consider these dimensions jointly.

Background Factors Related to Self-Actualization Needs. Of the nine dimensions considered, only three—intelligence, socioeconomic level, and family relations—show any meaningful relationship with the self-actualization needs. There is a small positive relationship between SEL and the needs for self-development (Eta = .13) and self-utilization (Eta = .16). The family relations measure shows a curvilinear association with these needs; self-actualization needs are highest among those reporting the best family relations, but throughout the lower range of family relations these needs remain stable at a level just slightly below the grand mean (Eta = .25 for self-development, Eta = .21 for self-utilization). Relationships with intelligence are linear; as intelligence increases so do the needs for self-development (Eta = .20) and self-utilization (Eta = .19).

In sum, the family background dimensions and intelligence account for about 12 percent of the variance in the need for self-development, and about 10 percent in the need for self-utilization. Boys who are highest in SEL, family relations, and intelligence are highest in self-actualization needs.

Test Anxiety: the Need to Avoid Failure

Test anxiety has been used by Atkinson (1964) as a measure of fear of failure or the need to avoid failure. According to Atkinson's theory, persons with a high fear of failure are likely to avoid situations of intermediate risk, i.e., those situations which provide a realistic challenge to their abilities. Our operationalization of this dimension consists of 16 true-false questions asking the respondent about his feelings concerning tests; this is an adaptation by Irwin Katz from the Mandler-Sarason (1952) Test Anxiety Questionnaire.

Our subjects report a good deal of anxiety over exams. About half say they feel very panicky when having to take a surprise exam. Nearly three quarters say that during the tests they find themselves thinking about what it would mean to fail. Over one quarter say they frequently experience stomach upsets after important tests. A third say they freeze up on things like intelligence tests and final exams. And 83 percent check this item as true: "After taking a test, I always feel that I could have done better than I actually did." (See Bachman, et al., 1967, for a complete listing of items in the scale; see Arscott, 1968, for items plus response distributions).

Background Factors Related to Test Anxiety. These concerns about test performance are related to several background factors. Most important is intelligence: the higher a boy's ability (Quick Test score), the lower is his test anxiety (Eta = .25). Socioeconomic level and family relations also relate negatively to test anxiety; boys are less anxious about tests to the extent that their SEL is high (Eta = .15) and they get along well with their parents (Eta = .18). Taken together, these three predictors can account for about 10 percent of the variance in test anxiety.

Need for Social Approval

The questionnaire included 31 true-false items developed by Crowne and Marlowe to measure the need for social approval. These authors describe the scale as measuring the tendency to avoid self-criticism and "to choose self-evaluative statements which summatively portray a stereotypically acceptable self-image" (Crowne and Marlowe, 1964, p. 180).

It appears that the need for social approval is quite strong in tenth-grade boys. Consider the following examples of items which a surprisingly large number of boys checked as true of themselves: I never hesitate to go out of my way to help someone in trouble (60 percent checked as true). I am always careful about my manner of dress (82 percent). I always try to practice what I preach (68 percent). I never resent being asked to return a favor (81 percent). I am always courteous, even to people who are disagreeable (53 percent). I have never deliberately said something that hurt someone's feelings (44 percent).

It is difficult to imagine very many individuals for whom the above statements are "always" or "never" true; nevertheless, our respondents describe themselves in these terms.

On the other hand, a good many boys also checked negative items as being true of them: On occasion I have doubts about my ability to succeed in life (68 percent checked as true). I sometimes try to get even, rather than forgive and forget (64 percent). I am sometimes irritated by people who ask favors of me (44 percent). There have been occasions when I took advantage of someone (74 percent).

In the case of these negative items, it is surprising that a *larger* number did not check them as being true. For example, we certainly would suspect that far more than 68 percent of tenth-grade boys have occasional doubts about their ability to succeed in life. In short, the Crowne-Marlowe scale seems to tap a rather substantial tendency to avoid self-critical statements. (See Bachman, et al., 1967, for a complete listing of items in this scale; see Arscott, 1968, for items plus response distributions.)

Background Factors Related to the Need for Social Approval. The eight background factors plus intelligence are shown in relation to the need for social approval in Table 6-5. The association between intelligence and social approval needs is small (Eta = .15), but nonetheless interesting. The lower an individual's intelligence, the more likely he is to score high on the Crowne-Marlowe scale—that is, the more likely he is to check many of the statements mentioned above as being "always" or "never" true of himself. This is scarcely surprising; those individuals who are the most intelligent are probably also among the most "test-wise," and thus may be suspicious of many of the overstated true-false items in the Crowne-Marlowe scale.

Socioeconomic level shows only a slight association with the need for social approval (Eta = .13); the relationship is inverse, with boys at the lowest SEL showing the highest need for social approval. The racial differences (Eta = .16) are due primarily to a higher need for social approval on the part of blacks in southern segregated schools.

The largest and most important relationship with the need for social approval involves the measure of family relations, as shown in Figure 6-2 (Eta = .29). There is a positive association between these two dimensions which is particularly strong at the high end of the family relations scale. This may mean that boys who get along well with their parents really do take more care in their manner of dress, and practice what they preach, and do the rest of the socially desirable things in the Crowne-Marlowe scale; an equally plausible explanation is that boys who get along well with their parents also have a greater need to portray themselves as socially acceptable.

Both of the above interpretations view good family relations as a *cause* of high scores on the Crowne-Marlowe scale. An alternative explanation is to consider the family relations measure

TABLE 6-5

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO NEED FOR SOCIAL APPROVAL

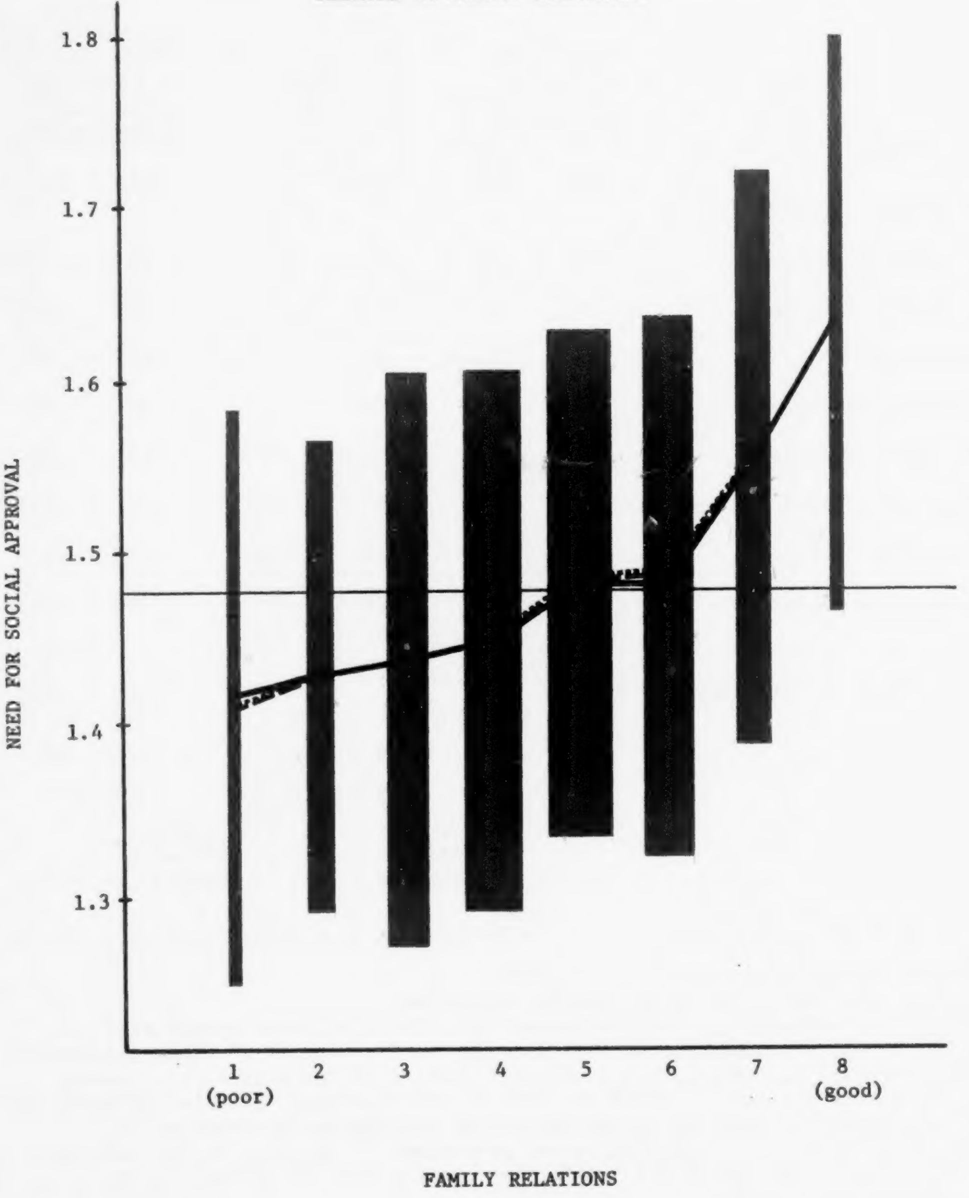
	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.13	.017	.11	.012	.09	.008
Number of Siblings	.07	.005	.04	.002	.04	.002
Broken Home	.03	.001	.03	.001	.03	.001
Family Relations	.29	.086	.30	.092	.31	.094
Religious Preference	.09	.008	.08	.007	.08	.007
Family Political Preference	.08	.007	.05	.002	.05	.002
Community Size	.09	.008	.09	.007	.09	.008
Race (Five-Category)	.16	.027	.14	.021	.12	.015
Quick Test of Intelligence	.15	.022			.11	.012
			R = .357 R^2 = .128		R = .369 R^2 = .136	
			Percent Variance Explained = 14.4		Percent Variance Explained = 15.3	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

FIGURE 6-2

NEED FOR SOCIAL APPROVAL
RELATED TO FAMILY RELATIONS



——connects unadjusted subgroup means (Eta = .29).
— — connects means adjusted for family background factors (Beta = .30).
······connects means adjusted for family background plus intelligence (Beta = .31)
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

as reflecting rather than causing the need for social approval. If a boy has a strong need to portray himself in a favorable light, perhaps he will for the same reasons describe his family relations in very favorable terms. We have noted before that the family relations measure is highly subjective; now, given its substantial correlation with the Crowne-Marlowe scale, we must be even more suspicious about the extent of its validity as a measure of the actual relationships between a boy and his parents.

Summary

Attitudes toward school, needs for self-development and self-utilization, test anxiety, and the need for social approval were examined in this chapter. The needs for achievement and affiliation were not included, because of the apparent failure of our interview adaptation of the Thematic Apperception Test to obtain meaningful motive scores.

Two school attitude scales, one based on positive items and the other based on negative ones, suggest fairly strong motivation toward school on the part of tenth-grade boys. More positive (or less negative) attitudes toward school appear for boys who are higher in intelligence, socioeconomic level, and family relations.

Slightly smaller but otherwise similar effects appear between background factors and needs for self-development and self-utilization. Those boys are highest in these self-actualization needs who are also highest in intelligence, socioeconomic level, and family relations.

Test anxiety, a dimension which has often been used to indicate a general motive to avoid failure, is fairly high among our respondents. They say that they worry a lot before, during, and after exams. The same pattern of background factors operates here as was noted above, but the relationships are inverse. The higher a boy's intelligence, socioeconomic level, and family relations the *lower* is his test anxiety.

The Crowne-Marlowe measure of the need for social approval taps an individual's tendency to portray himself in "stereotypically acceptable" terms. Judging from their responses, this need is quite high among tenth-grade boys. The need for social approval shows a slight negative association with intelligence and socioeconomic level; the brighter and more advantaged boys show a bit less of this need to portray themselves favorably. But the social approval need shows a positive association with the family relations measure; the same boys who say they get along very well with their parents also portray themselves in very favorable terms. This may well indicate that our measure of family relations is heavily influenced by respondents' needs for social acceptability.

Chapter 7

SELF-ESTEEM AND OTHER AFFECTIVE STATES

This chapter deals with dimensions that have been of great interest to social scientists for a long time. Self-esteem, happiness, depression, anomie—these and a number of other dimensions all have something to do with an individual's general satisfaction with life. And satisfaction, of one sort or another, has consistently appeared as an important criterion dimension when the impacts of social environments are studied.

While there has been much interest in such dimensions, there has not been a great deal of consistency in their measurement or in their conceptualization. A major step toward improving this situation has recently been taken by Robinson and Shaver (1969) in their extensive review and documentation of social psychological attitude measures. Another effort, currently underway within the Institute for Social Research, will make extensive use of the present Youth in Transition data, along with data from many other sources, in an attempt to improve conceptualization and operationalization in the general domain of affective states. In the present chapter, however, we must limit our efforts to reporting separately on several dimensions that deal with affective states, recognizing that a coherent theory interrelating them has yet to be completed.

This approach seems pragmatically sound, if not theoretically satisfying. Robinson and Shaver have noted that life satisfaction and happiness measures have consistently correlated with each other and with other psychological attitudes. "Particularly significant is the finding that persons of high self-esteem or personal competence express more satisfaction with life. Satisfaction has also been found to be greater among people who are better socially adjusted, who demonstrate more trust in people, who feel less alienated, and who suffer less from anxiety, worry, and psychosomatic symptoms" (Robinson and Shaver, 1969, p. 35).

This general finding is replicated in our data collected from tenth-grade boys. Table 7-1 lists the dimensions to be reported in this chapter, and presents product-moment correlations among them. As the table indicates, self-esteem shows fairly strong relationships with each of the other scales having to do with affective states.

TABLE 7-1

PRODUCT-MOMENT CORRELATIONS AMONG SELF-ESTEEM AND OTHER AFFECTIVE STATES DIMENSIONS

	1.	2.	3.	4.
1. Self-Esteem				
2. Negative Affective States	-.52			
3. Happiness	.54	-.51		
4. Somatic Symptoms	-.34	.54	-.28	
5. Impulse to Aggression	-.34	.54	-.33	.32

Self-Esteem

Two recent books dealing with self-esteem attest to the continuing interest in this concept. Rosenberg (1965) presents an extended treatment of self-esteem in adolescents, based on questionnaire data from over five thousand high school students in New York State. Coopersmith (1967) reports a more intensive study of self-esteem in younger children (fifth and sixth graders). As Coopersmith points out, many findings from the two studies are similar; we will note shortly that our own findings parallel theirs in some ways, and also provide significant new information on racial differences in self-esteem.

The Meaning of Self-Esteem. Self-esteem has been defined in many ways by previous writers. Within our own program of research a variety of meanings have been associated with this term. French and Kahn mention self-esteem among affective states, but they also define it in self-identity terms:

> Self-esteem may be defined as the average evaluation of the attributes of the self-identity, where each attribute is weighted according to its centrality. Another measure of self-esteem may be derived from discrepancies between the person's perceived attributes and the attributes of his ideal self, where the ideal self is conceived as the most desirable positions on the dimensions of self-identity (French and Kahn, 1962, p. 21).

Except for our measure of school ability self-concept, we have found it difficult to measure self-identity dimensions through interview techniques; thus for the present at least, we cannot operationalize self-esteem in terms of self-identity.

The definitions provided by Rosenberg and by Coopersmith are quite consistent with the above views, although not linked so explicitly to self-identity dimensions:

> When we speak of high self-esteem, then, we shall simply mean that the individual respects himself, considers himself worthy; he does not necessarily consider himself better than others, but he definitely does not consider himself worse; he does not feel that he is the ultimate in perfection but, on the contrary, recognizes his limitations and expects to grow and improve.
>
> Low self-esteem, on the other hand, implies self-rejection, self-dissatisfaction, self-contempt. The individual lacks respect for the self he observes. The self-picture is disagreeable, and he wishes it were otherwise (Rosenberg, 1965, p. 31).
>
> By self-esteem we refer to the evaluation which the individual makes and customarily maintains with regard to himself: it expresses an attitude of approval or disapproval, and indicates the extent to which the individual believes himself to be capable, significant, successful, and worthy. In short, self-esteem is a *personal* judgment of worthiness that is expressed in the attitudes the individual holds toward himself (Coopersmith, 1967, pp. 4-5).

These several definitions share a common theme which is basic to our use of the term: high self-esteem consists of favorable perceptions and evaluations of oneself.

Our measure of *self-esteem*, summarized in Table 7-2, is very close to that used by Rosenberg (1965). Six of the ten items were adapted directly from Rosenberg's scale; the others, developed in a study of individuals changing jobs (Cobb, et al., 1966), are quite similar to the Rosenberg items. It was on the basis of high intercorrelations in a pilot study that we decided there was no reason to keep the two sets of items separate; see Bachman, et al., 1967, p. 73. The response scale ranging from "almost always true" to "never true" was used to maintain consistency with other portions of our questionnaire, and to permit the embedding of self-esteem items within a much larger set of affective states items.

The response distributions in Table 7-2 suggest a fairly high level of self-esteem in tenth-grade boys. Two-thirds of our respondents say that they often or almost always feel themselves persons of worth, at least on an equal plane with others. Almost as many respond that they often or almost always feel they have a number of good qualities, and feel they are able to do things as well as most other people. The item which elicits the highest proportion of low self-esteem responses, "Sometimes I think I am no good at all," may be just the sort of statement which captures some adolescents' uncertainty about themselves. It is worth noting that the proportion of boys checking this statement as often or

TABLE 7-2
SELF-ESTEEM SCALE

	Percentage Frequencies				
	Almost always true	Often true	Sometimes true	Seldom true	Never true
SELF-ESTEEM (Rosenberg)					
I feel that I'm a person of worth, at least on an equal plane with others	29	38	26	5	1
I feel that I have a number of good qualities.	18	42	33	5	1
I am able to do things as well as most other people.	17	47	31	5	-
[a]I feel I do not have much to be proud of . .	5	9	17	30	37
I take a positive attitude toward myself . .	18	38	34	8	1
[a]Sometimes I think I am no good at all . . .	5	12	30	35	18
SELF-ESTEEM (Cobb)					
I am a useful guy to have around	17	41	39	2	-
[a]I feel that I can't do anything right . . .	4	8	22	37	29
When I do a job, I do it well	17	41	36	4	1
[a]I feel that my life is not very useful . . .	4	6	20	34	34

---

[a] Reversed scoring

TABLE 7-3

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO SELF-ESTEEM

	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.15	.023	.12	.014	.10	.009
Number of Siblings	.07	.005	.03	.001	.03	.001
Broken Home	.04	.002	.03	.001	.03	.001
Family Relations	.36	.133	.36	.128	.35	.124
Religious Preference	.12	.014	.09	.008	.08	.007
Family Political Preference	.06	.003	.04	.002	.04	.002
Community Size	.08	.006	.05	.002	.04	.002
Race (Five-Category)	.07	.005	.10	.010	.14	.019
Quick Test of Intelligence	.14	.021			.12	.016
			$R = .393$		$R = .406$	
			$R^2 = .155$		$R^2 = .165$	
			Percent Variance Explained = 17.0		Percent Variance Explained = 18.1	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

almost always true drops from 17 percent to 10 percent as they go from the start of tenth grade to the end of twelfth grade; similarly, the seldom or never true responses increase from 53 percent to 66 percent.[1]

Background Factors Related to Self-Esteem. Table 7-3 summarizes relationships between self-esteem and the eight dimensions of family background plus the Quick Test of intelligence. As we examine a number of these relationships we will note similarities to the findings of Rosenberg (1965) and Coopersmith (1967).

Looking briefly at the data for intelligence, we find a small positive association with self-esteem (Eta = .14). A comparison of R^2 with and without the Quick Test (in Table 7-3) indicates that the QT adds only about 1 percent to the ability of background factors to account for variance in self-esteem.

Coopersmith (1967) found a similar but much larger relationship between measured intelligence and self-esteem in his sample of fifth and sixth grade students. He also found self-esteem to be related to self-reports of grades and school ability. Our measure of school ability self-concept, presented in Chapter 5, does show a positive relationship with self-esteem (r = .33). And our respondents' reports of grades, to be discussed further in Chapter 9, also relate positively to self-esteem (r = .23).

Turning next to socioeconomic level, our findings are essentially the same as those of Rosenberg (1965) and Coopersmith (1967); we find a weak positive relationship between SEL and self-esteem (Eta = .15).

We find, as did Rosenberg (1965), a tendency for only children to be slightly higher than others in self-esteem. Once we adjust for SEL (through Multiple Classification Analysis), this is the only difference in self-esteem that relates to family size, and it amounts to only one-tenth of a standard deviation.

By far the largest relationship between self-esteem and the dimensions of family background involves family relations (Eta = .36). Figure 7-1 displays the substantial positive association between self-esteem and good relations with parents. This is consistent with Rosenberg's (1965) finding that adolescents with high self-esteem report that their parents show relatively high interest in their friends, their academic performance, and their contributions to mealtime conversation.

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[1] There is an upward shift in the total self esteem scale, as we shall note in Chapter 11.

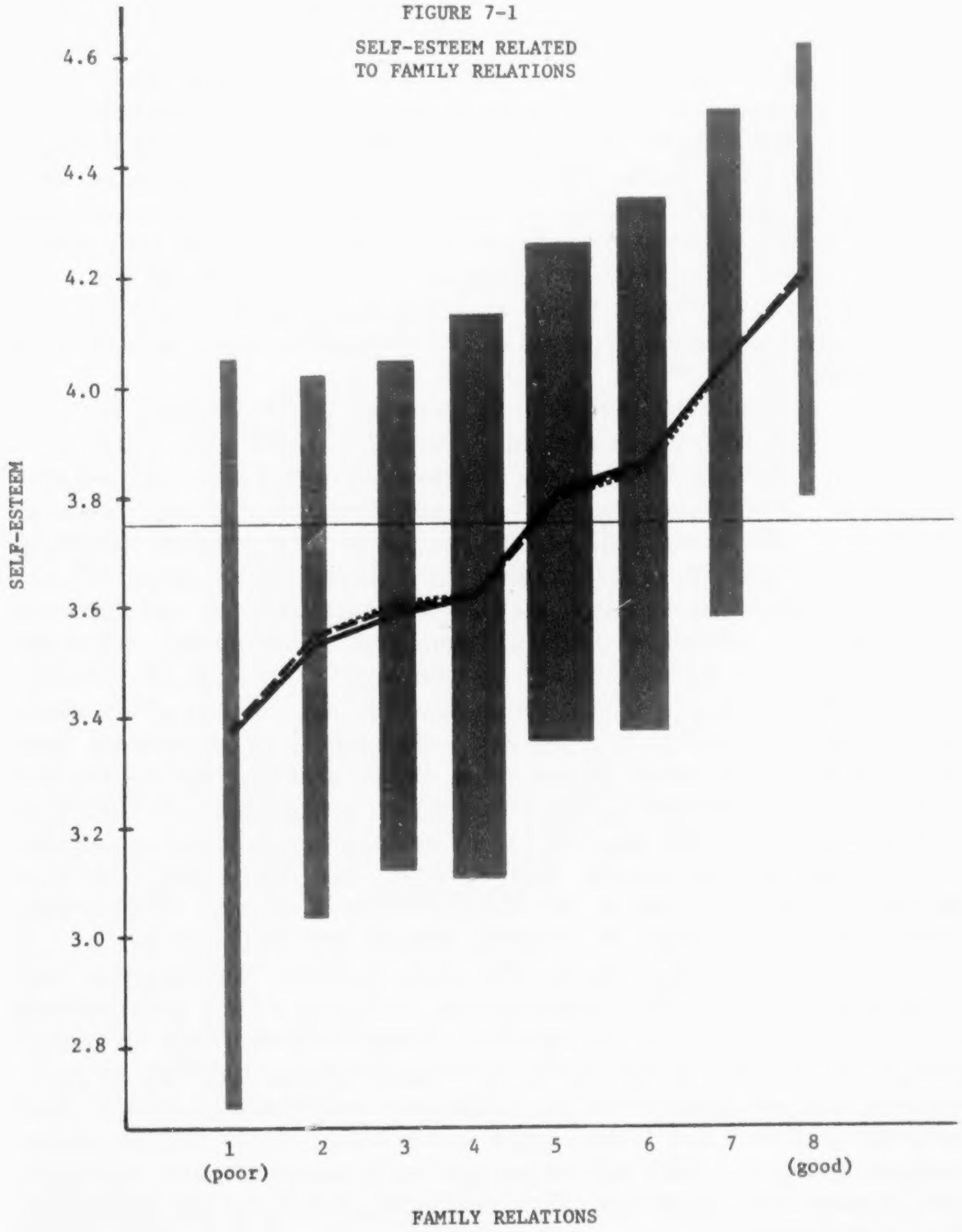


FIGURE 7-1

SELF-ESTEEM RELATED TO FAMILY RELATIONS

▬▬ connects unadjusted subgroup means (Eta = .36).

▬ ▬ • connects means adjusted for family background factors (Beta = .36).

•••••• connects means adjusted for family background plus intelligence (Beta = .35).

Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.

See Appendix E for further information and for data underlying figures.

Our findings in this area, and those of Rosenberg as well, suffer from the lack of objective data concerning parental behavior. We have had to rely on the subjective assessments of respondents, and as we noted in Chapter 6, such assessments may be colored by tendencies to portray oneself in a favorable light. Coopersmith (1967), on the other hand, did have objective data concerning parental behaviors. Ratings of maternal affection and interest, obtained from interviewer reports and responses by mothers, were positively related to self-esteem in Coopersmith's sample of pre-adolescents. These findings corroborate our own, and leave us less inclined to dismiss our subjective data on relations with parents.

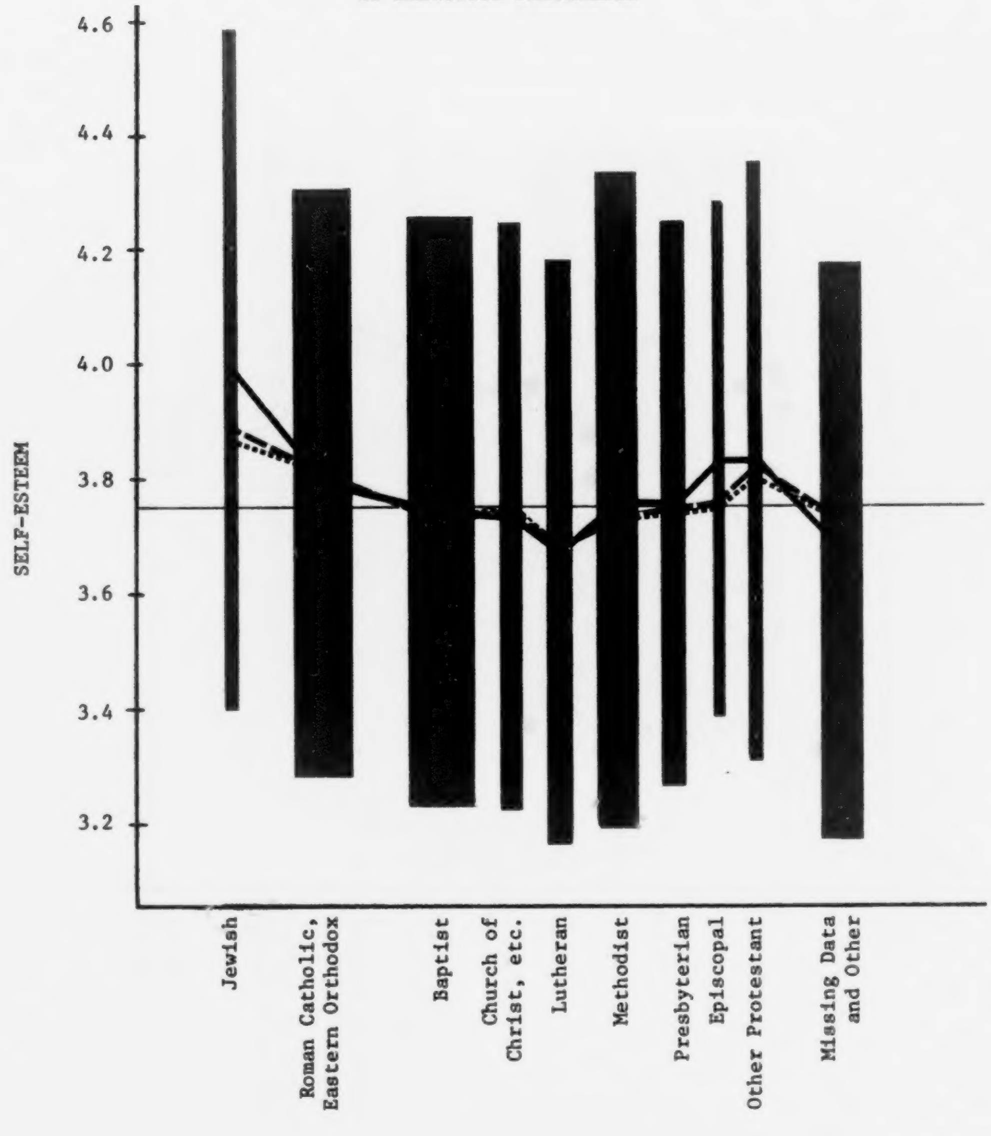
We turn next to religious differences as they relate to self-esteem. The data, presented in Figure 7-2, show very little difference in self-esteem among religious groups, with one notable exception: Jewish respondents are above average in self-esteem. Unadjusted, the mean self-esteem score for the Jewish subgroup is one-half standard deviation above the grand mean; after adjustments for other background factors and intelligence, a difference of one-quarter standard deviation remains. This effect, while not strikingly large, is notable for two reasons. First, it is consistent with Rosenberg's (1965) clear finding that Jewish adolescents are above average in self-esteem. Second, it is consistent with other findings in this monograph, some already discussed and others to be presented later, which show Jewish boys to be above average in ability and aspiration, as well as in their self-concepts.

Racial Differences in Self-Esteem. As Rosenberg has suggested, if general status in society were a strong determining factor in self-esteem, we should expect low self-esteem among blacks, "who are exposed to the most intense, humiliating, and crippling forms of discrimination in virtually every institutional area" (Rosenberg, 1965, pp. 56-57). Rosenberg did find his small sample of black adolescents to be slightly below average in self-esteem, but he considered the difference surprisingly small. Our present findings are even more surprising; black males score noticeably *higher* than whites on our self-esteem scale, and when adjustments are made for other background factors the difference becomes larger.

Figure 7-3 presents both unadjusted and adjusted racial differences in self-esteem. After adjustments for background and Quick Test differences, blacks in integrated schools are 30 percent of a standard deviation higher than whites, and those in segregated schools are 50 percent of a standard deviation above the whites.

FIGURE 7-2

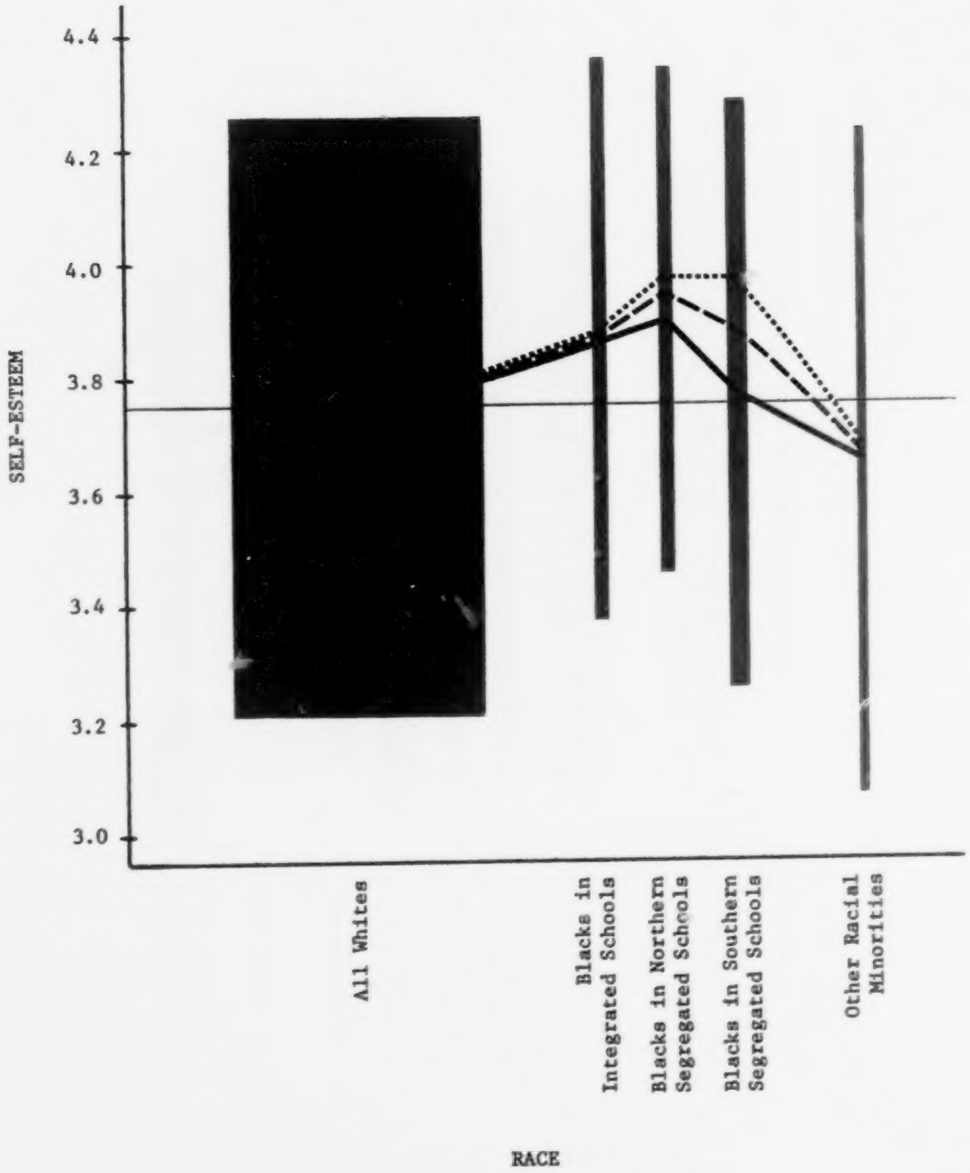
SELF-ESTEEM RELATED
TO RELIGIOUS PREFERENCE



——— connects unadjusted subgroup means (Eta = .12).
–·–· connects means adjusted for family background factors (Beta = .09).
······ connects means adjusted for family background plus intelligence (Beta = .08).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 7-3

SELF-ESTEEM RELATED
TO RACE (FIVE-CATEGORY)



—— connects unadjusted subgroup means (Eta = .07).
— — — connects means adjusted for family background factors (Beta = .10).
······· connects means adjusted for family background plus intelligence (Beta = .14).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

On the face of it, these data suggest that a common assumption may be wrong, and that young black men do not in fact have low self-esteem. This is a provocative finding; but like some other racial differences, it leaves us with difficult problems of interpretation. We noted in Chapter 5 that self-concept of school ability among blacks is relatively high (i.e., it is high after adjustment for other background factors—see Figure 5-5). And in Chapter 6 we found that blacks are higher than whites in the need for social approval. Thus the possibility certainly exists that these high self-esteem scores reflect a need among young black men to portray themselves in favorable terms. We will return to this issue in the final chapter, when additional evidence will be available to aid in our interpretation.

Affective States

Negative Affective States. A number of scales were included in the questionnaire to measure dimensions of affective states. An examination of intercorrelations revealed that six of these scales are very closely associated with each other.[2] Accordingly, a single composite measure of *negative affective states* was constructed by computing a mean for each respondent based on the following six scales:

Irritability (seven items)
General anxiety (seven items)
Anxiety and tension (five items)
Depression (six items)
Anomie (eight items)
Resentment (seven items)

The term negative affective states seems an appropriate summary of these dimensions. A respondent scoring high on this composite measure would say that he sometimes, often or almost always, feels: depressed, bored, useless, left out, worried about many things, jealous, resentful, tense, and irritable.[3]

The relationship between negative affective states and background factors can be described very briefly. The family relations measure shows a strong linear relationship with affective states; the poorer the family relations the greater the incidence of negative affective states (Eta = .43). Only one other relationship is even worth mentioning: individuals with low scores on the Quick Test are more likely to experience negative affective states (Eta = .11). All the rest of the background dimensions taken together add virtually nothing (less than 1 percent variance explained) to our prediction of negative affective states.

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[2] The 15 product-moment correlations among pairs of these indexes range from .43 to .67, with a median of .57. Moreover, their correlations with the Somatic Symptoms index (discussed below) are tightly grouped within a range of .41 to .45.

[3] For a complete list of the items used in the negative affective states scales, see Bachman, et al., (1967); see also Arscott (1968) for items plus response distributions.

Happiness. Six questionnaire items were combined to form a very simple index of happiness. Five of the items were positive: I generally feel in good spirits; I am very satisfied with life; I find a good deal of happiness in life; I feel like smiling; I feel happy. A majority of respondents, ranging from 56 to 72 percent, said these statements were often or almost always true of themselves. Only 11 percent said the one negative item, "I feel sad," was often or almost always true of them.

The family relations measure shows a positive linear correlation with this happiness index (Eta = .37). Absolutely nothing is added to our prediction of this criterion when all other background dimensions plus intelligence are included in a multiple classification analysis.

In short, the boys who describe their family relations in positive terms also present a relatively positive picture of their own affective states, and this is true whether we use a simple index of happiness or a large composite measure of negative affective states.

Somatic Symptoms

An 18-item checklist of physical complaints was adapted from the questionnaire used by Gurin, et al., (1960) in the study *Americans View Their Mental Health*. Most of our respondents indicate that they are seldom or never bothered by such things as nervousness, headaches, loss of appetite, shortness of breath, dizziness, and trembling hands. Just under half say that at least sometimes they have trouble getting to sleep or staying asleep, and many say they find it difficult to get up in the morning. The general picture is one of good health and few symptoms, as might be expected for young men in high school. (For a list of the 18 items, see Bachman, et al., 1967; see also Arscott, 1968, for items plus response distributions).

Our subjects do differ in the degree to which they mention these symptoms, and these differences are strongly associated with negative affective states (product moment r = .54) and moderately related to our happiness index (r = -.28).

The family relations measure shows a strong inverse association with somatic complaints; the better a boy reports getting along with his family, the fewer symptoms he mentions (Eta = .43). Small relationships also appear with socioeconomic level (Eta = .15) and family size (Eta = .13); more symptoms are reported by boys at lower socioeconomic levels and those with three or more siblings.

A moderate relationship appears between somatic complaints and intelligence; there are considerably more symptoms at the lowest level of Quick Test scores, and there is a continuing tendency for complaints to decrease at higher levels of Quick Test scores (Eta = .21).

Impulse to Aggression

The scale dealing with impulse to aggression is, like the happiness scale, based on only a few items: I feel like swearing, I feel like losing my temper at my teachers, I feel like being a little rude to my teachers, I feel like picking a fight with my parents. Each of these statements was endorsed by about 20 percent of the boys, who said they were often or almost always true; about 23 percent said they were sometimes true, and about half said they were seldom or never true.

There are several reasons for including the impulse to aggression scale in a chapter on affective states. First, it reflects some of the same sort of affect as is tapped by the index of negative affective states; it correlates highly with this index (r = .54), and it shows fairly strong associations with other dimensions described in this chapter (see Table 7-1).

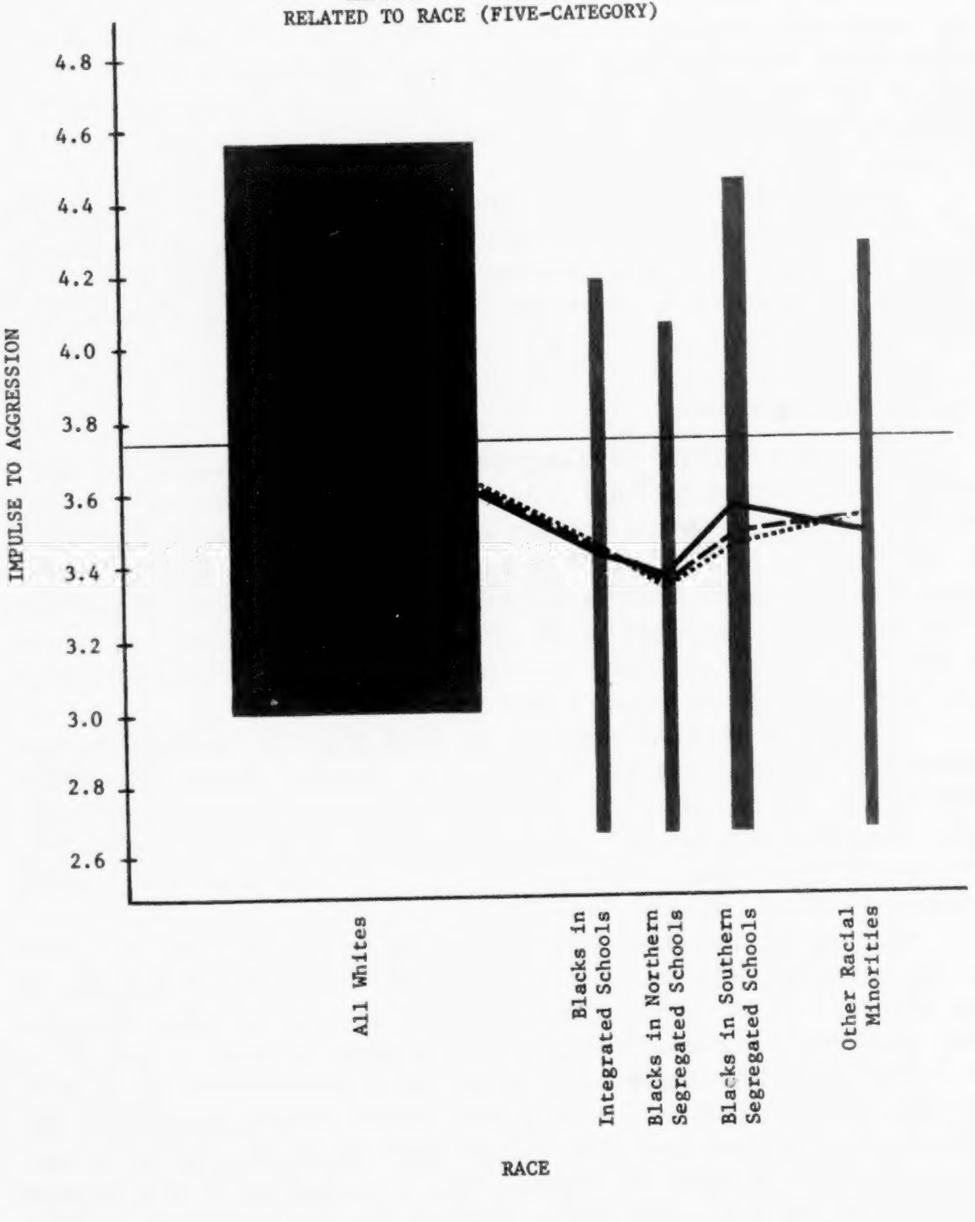
Second, we find that impulse to aggression shows the same strong correlation with family relations as we found earlier in this chapter. The better a boy says he gets along with his parents, the fewer aggressive impulses he reports (Eta = .36).

Third, we find some interesting racial differences in reporting aggressive impulses—differences which relate closely to our findings on self-esteem. The racial differences in impulse to aggression are displayed in Figure 7-4; a comparison with Figure 7-3 reveals the similarity to the findings for self-esteem. Clearly, the young black males in our sample admit to fewer aggressive impulses than do whites.

This finding raises again the question we asked concerning racial differences in self-esteem: how much of the difference reflects a high need for social approval or favorable self-portrayal? We found that the need for social approval (Crowne-Marlowe scale)

FIGURE 7-4

IMPULSE TO AGGRESSION
RELATED TO RACE (FIVE-CATEGORY)



——— connects unadjusted subgroup means (Eta = .14).
-·-·- connects means adjusted for family background factors (Beta = .15).
······ connects means adjusted for family background plus intelligence (Beta = .15).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

correlates positively with self-esteem (r = .29); it shows a stronger negative correlation with impulse to aggression (r = -.50). This adds some support to the view that our black respondents have a strong need to portray themselves in favorable terms.

Summary

Self-esteem, defined as favorable perceptions and evaluations of oneself, is strongly correlated with a measure of happiness or satisfaction with life; it is inversely related to measures of negative affective states, somatic symptoms, and impulse to aggression.

Our findings show a number of consistencies with other recent studies dealing with self-esteem (Rosenberg, 1965; Coopersmith, 1967): (a) Self-esteem shows a very small positive correlation with intelligence, and somewhat higher correlations with self-concept of school ability and self-reports of grades. (b) Socioeconomic level also shows a positive, but rather weak, association with self-esteem. (c) Jewish respondents are above average in self-esteem.

Family relations show a fairly strong correlation with self-esteem; the better the relationship a boy reports between himself and his parents, the higher his self-esteem. Our data, based only on subjective reports, are consistent with those of Coopersmith (1967), who used more direct and objective measures of parental attitudes and behavior.

The family relations measure is consistently the strongest predictor of the other dimensions treated in this chapter. It relates positively to the happiness scale, and negatively to the others. Negative affective states, somatic symptoms, and impulse to aggression are reported highest among those who also describe the poorest relationships with their parents. It is difficult to be certain about what these correlations mean. It is not unreasonable to expect affective states, self-esteem, and family relations all to be associated; but the fact that all of these dimensions involve highly subjective response scales leaves open the possibility that some of the association may be attributable solely to similarities in the method of measurement.

An important finding in this chapter is that young black men report substantially higher self-esteem and lower impulse to aggression than do whites. The data are certainly provocative; taken at face value, they suggest that young blacks do *not* suffer low self-esteem.

Chapter 8

VALUES AND ATTITUDES

The dimensions examined in this chapter cover a wide range including: occupational attitudes, feelings of personal efficacy or control of one's destiny, trust in other people, trust in the government, political awareness, and social values such as self-control, social responsibility, and reciprocity. The grouping of criteria in this chapter, as in others, reflects some assumptions about conceptual similarity. But in addition to conceptual similarity, most of the dimensions included here have at least one other thing in common; they are important to people in general, as well as to social scientists.

Social Values

The questionnaire included a set of 10 scales, based largely on items developed by Scott (1965) and Klinger (1961), and designed to tap values that are highly approved in the United States. Building on the theoretical position that values reflect a sense of "oughtness" that one applies to all people, we asked respondents to rate each of a number of statements according to whether it is (1) a very good thing for people to do, (2) a good thing . . ., (3) a fairly good thing . . ., (4) a fairly bad thing . . ., (5) a bad thing . . ., (6) a very bad thing for people to do.

Six of the value dimensions were closely related conceptually and are intercorrelated at a fairly high level. (Product-moment correlations between pairings of them range from .21 to .71, with a median of .51.) Accordingly, a composite measure of *social values* was constructed by computing a mean for each respondent based on the following six value scales:

Honesty (seven items)
Kindness (four items)
Reciprocity (seven items)
Self-control (five items)
Social responsibility (four items)
Social skills (six items)

Complete listings of items and response distributions are available elsewhere (Bachman, et al., 1967; Arscott, 1968); a few items can serve as illustrations. An overwhelming majority (80 percent) of tenth-grade boys endorse the following statement in the kindness scale: "Helping another achieve his goals, even if it might interfere with your own." The honesty scale poses some more difficult items: 87 percent apply one of the good ratings to "Always telling the truth, even though it may hurt oneself or others;" however, the related item, "Telling a lie to spare someone's feelings," is rated bad by slightly fewer than half. "Helping a close friend get by a tight situation, even though you may have to stretch the truth a bit to do it" is given a good rating by 73 percent of the boys. In short, the respondents are very much in favor of telling the truth—in principle; but when honesty is in competition with consideration for another's feelings or loyalty to a friend, then many of them are willing to condone some degree of dishonesty.

Items in the reciprocity scale contain little in the way of conflicting values. Accordingly, about 90 percent or more of the respondents give ratings on the good side to items such as "Helping a person who has helped you" and "People paying their debts no matter what." Most of the self-control items were couched in similarly positive terms; thus over 90 percent endorse "Practicing self-control: and "Always being patient with people." Even the more qualified items, such as "Not expressing anger, even when you have a reason for doing so," are endorsed as good by more than 80 percent. The social skills items are endorsed by practically everyone; consistently over 90 percent give good ratings to statements such as "Being able to get along with all kinds of people, whether or not they are worthwhile," and "Being able to get people to cooperate with you."

Several items in the social responsibility scale are stated in negative terms. "Borrowing money and not expecting to pay it back" and "Charging bills without knowing how to pay them" are given a bad rating by just under 80 percent of the respondents. On the other hand, the fact that about 20 percent would rate the above statements good is a bit unsettling. A more mildly negative item, "Holding a reserve library book needed by another student," is endorsed as good by 26 percent.

One interpretation of the above percentages is that at least a portion of boys endorsing negative items are not really socially irresponsible, but were instead lulled into a positive response bias by a very large proportion of positively-worded items in the questionnaire section on values. We suspect this interpretation is realistic rather than charitable; total scores on the composite social values index are very similar when we compare boys of average and those of above average intelligence (as measured by the Quick Test), but those with the lowest intelligence scores have lower scores on the social values index—quite possibly because they were not reading the items carefully enough.[1]

Background Factors Related to Social Values. The relationships between background dimensions and social values are summarized in Table 8-1. By far the strongest association involves the family relations measure (Eta = .35); the better a boy's relations with his parents, the higher he scores on the social values index. As the multiple correlation coefficients indicate, the remaining background factors and intelligence add very little to our ability to predict social values scores. There is a slight tendency toward lower social values scores among boys at low socioeconomic levels and among those from relatively large families. These findings are not surprising, particularly in the light of the tendency we noted earlier for boys at the lowest levels on the Quick Test to have lower social values scores.

In short, family relations is the one family background dimension that predicts clearly to social values. The questions raised in the last chapter concerning the family relations index are equally applicable here: it is a highly subjective dimension that shows its strongest associations with criterion dimensions that are equally subjective.

Attitudes About Jobs

A series of items was included in the questionnaire to assess respondents' attitudes toward different aspects of jobs. An initial examination of intercorrelations among items led to the construction of two scales, one showing strength of preference for "a job that pays off," and the other showing strength of preference for "a job that doesn't bug me." The items and response distributions are presented in Table 8-2.

Early analyses indicated that although these two scales are positively correlated (r = .13), they consistently show opposite relationships with other dimensions (such as SEL, intelligence, and level of aspired occupation). An examination of the items in Table 8-2 will help account for these preliminary findings. Agreement with the "job that pays off" items implies a good deal of ambition—an interest in using present skills, learning new skills, get-

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[1] These speculations about response bias clearly suggest areas for further work. Such efforts go beyond the scope we have defined for the present monograph, but intensive exploration of social values will be made in future analyses of our data.

TABLE 8-1

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO SOCIAL VALUES

	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.16	.024	.12	.015	.10	.009
Number of Siblings	.11	.011	.05	.003	.05	.003
Broken Home	.08	.007	.03	.001	.03	.001
Family Relations	.35	.125	.33	.109	.32	.103
Religious Preference	.11	.013	.07	.005	.08	.006
Family Political Preference	.06	.004	.03	.001	.03	.001
Community Size	.05	.003	.02	.000	.03	.001
Race (Five-Category)	.08	.006	.04	.001	.05	.003
Quick Test of Intelligence	.19	.037			.16	.025
			R = .368		R = .389	
			R^2 = .136		R^2 = .151	
			Percent Variance Explained = 15.1		Percent Variance Explained = 16.8	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

TABLE 8-2

JOB ATTITUDE ITEMS

	Percentage Frequencies			
Item Content	Very important	Pretty important	A little important	Not important
PREFERENCE FOR "A JOB THAT DOESN'T BUG ME"				
A job where there's no one to boss me on the work	16	42	27	14
A job where I don't have to work too hard	13	31	36	18
A clean job, where I don't get dirty	16	28	30	25
A job where I don't have to take a lot of responsibility	12	29	35	23
A job that leaves me a lot of free time to do what I want to do	24	38	28	9
A job that my friends think a lot of -- has class	25	35	25	13
A job that doesn't make me learn a lot of new things	11	18	33	37
PREFERENCE FOR "A JOB THAT PAYS OFF"				
A job that is steady, no chance of being laid off	61	31	5	1
A job where I can learn new things, learn new skills	57	32	8	1
A job with good chances for getting ahead	67	25	5	1
A job where the pay is good	64	29	4	1
A job that uses my skill and abilities -- lets me do the things I can do best	62	30	5	1
A job that has nice friendly people to work with	49	39	9	1

An index of Ambitious Job Attitudes was computed as follows:

$$\begin{bmatrix}\text{Ambitious Job}\\ \text{Attitudes Score}\end{bmatrix} = \begin{bmatrix}\text{Job That Pays}\\ \text{Off Score}\end{bmatrix} - \begin{bmatrix}\text{Job That Doesn't}\\ \text{Bug Me Score}\end{bmatrix} + 4\text{[a]}$$

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[a] The constant was added to avoid negative values.

ting ahead, and making good pay. Agreement with the "job that doesn't bug me" items suggests something quite different from ambition; in fact it shows a tendency to avoid many things that we associate with ambition—things such as hard work, long hours, responsibility, and learning new skills. This difference in orientation between the two scales helps us understand why they show opposite relationships with other dimensions, but it leaves unexplained the fact that the two scales have a slight positive correlation with each other. We suspect that the positive correlation reflects some degree of response set or positive response bias. There is a strong tendency to check the "job that pays off" items as being very important. This tendency is sharply reduced, but by no means eliminated, in the "job that doesn't bug me" items. Obviously, some respondents checked both kinds of items as being important for themselves, and this is the basis for the positive correlation between the two scales.

Given these preliminary findings and our interpretation of them, it seemed appropriate to compute a summary index of *ambitious job attitudes*, an index which gives positive weight to the "job that pays off" items and negative weight to the "job that doesn't bug me" items. Such an index neatly cancels the effects of positive response bias (since a tendency toward checking "very important" operates half positively and half negatively in its effect on the index score). The formula for this index is presented at the bottom of Table 8-2.

Background Factors Related to Ambitious Job Attitudes. Table 8-3 summarizes the relationships between background factors and the index of ambitious job attitudes. The strongest relationship (Eta = .33) involves the family relations measure, as shown in Figure 8-1. The figure indicates that better family relations tend to be associated with greater ambition, but the effect is not entirely linear; those at the lowest level of family relations do not have the lowest mean score on the job attitudes index. Figure 8-1 also provides a graphic reminder of a general point first noted in an earlier chapter: adjustments for other background factors and intelligence do not appreciably affect the association between family relations and the criterion, because the family relations measure is only very slightly correlated with the other predictor dimensions.

The Quick Test provides the next strongest relationship with the ambitious job attitudes index (Eta = .27). The correlation is linear and positive—the more intelligent a boy is, the more ambitious are his attitudes toward jobs. However, adding the Quick Test to family background measures contributes relatively little

TABLE 8-3

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO AMBITIOUS JOB ATTITUDES

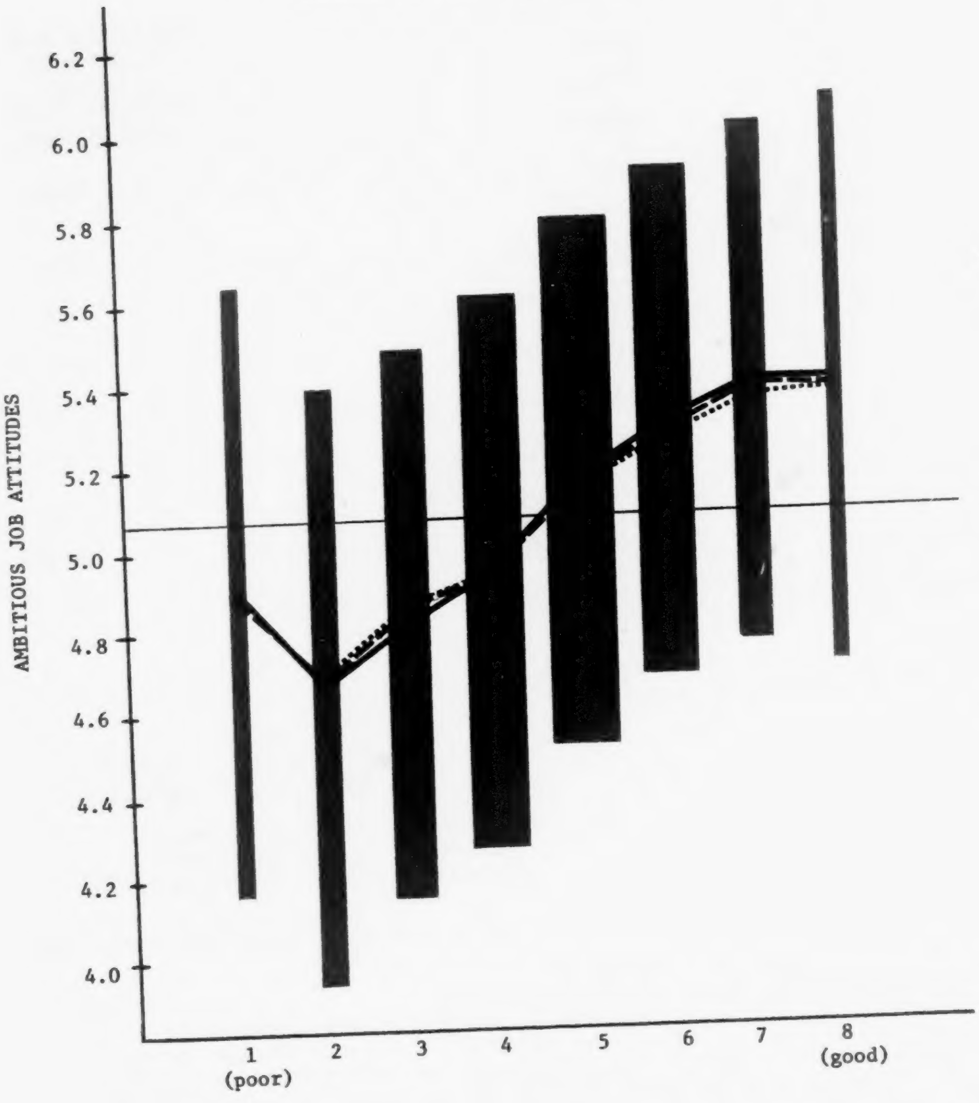
	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.23	.055	.13	.017	.10	.010
Number of Siblings	.16	.026	.04	.002	.04	.002
Broken Home	.06	.004	.02	.001	.03	.001
Family Relations	.33	.112	.31	.093	.30	.087
Religious Preference	.17	.029	.09	.008	.08	.007
Family Political Preference	.05	.002	.04	.002	.04	.002
Community Size	.09	.007	.05	.002	.05	.002
Race (Five-Category)	.20	.040	.11	.013	.07	.005
Quick Test of Intelligence	.27	.075			.17	.027
			R = .402		R = .423	
			R^2 = .162		R^2 = .179	
			Percent Variance Explained = 17.7		Percent Variance Explained = 19.5	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

FIGURE 8-1

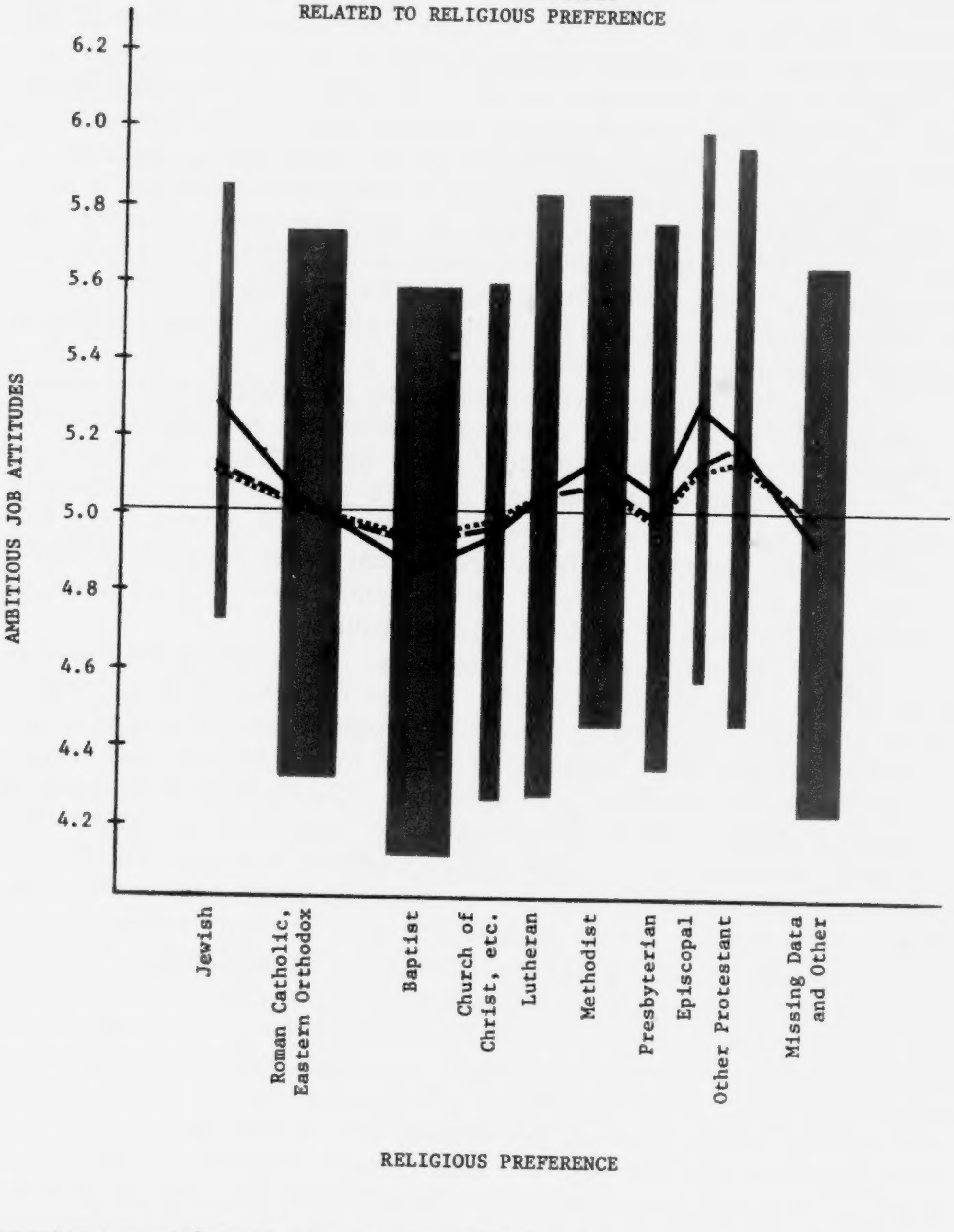
AMBITIOUS JOB ATTITUDES
RELATED TO FAMILY RELATIONS



——connects unadjusted subgroup means (Eta = .33).
·—·—connects means adjusted for family background factors (Beta = .31).
.......connects means adjusted for family background plus intelligence (Beta = .30).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 8-2

AMBITIOUS JOB ATTITUDES
RELATED TO RELIGIOUS PREFERENCE



—— connects unadjusted subgroup means (Eta = .17).
-·- connects means adjusted for family background factors (Beta = .09).
······ connects means adjusted for family background plus intelligence (Beta = .08).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

to our ability to predict ambitious job attitudes; as the summary statistics at the bottom of Table 8-3 indicate, the unique or independent effects of intelligence explain less than 2 percent of the total variance. Our interpretation, based on the model summarized in Figure 4-12, is that much of the relationship between the Quick Test and ambitious job attitudes actually reflects background effects operating through intelligence as an intervening variable.

Turning to one such background factor—socioeconomic level—which operates through intelligence as an intervening variable, we find a fairly consistent positive relationship with ambitious job attitudes (Eta = .23). The one exception to this trend is that those at the highest socioeconomic category show no higher ambition than those at the next highest category.

There are religious differences in job attitudes, as shown in Figure 8-2. The most ambitious attitudes are expressed by Episcopalians, the least ambitious ones by Baptists, and the rest of the Protestant denominations show a pattern of job attitudes that parallels the gradual increase in SEL as one moves from left to right on the figure. Catholics show just about average ambition in their job attitudes. Jewish respondents show a high level of ambition, equivalent to that of Episcopalians.

Racial Differences in Job Attitudes. Some racial differences exist in job attitudes (Eta = .20). These differences are complicated, however, and require careful examination. We may begin by observing that black respondents have lower scores than whites on the index of ambitious job attitudes. Those blacks who attend integrated schools differ from whites by less than one-third of a standard deviation, but those in segregated schools (North and South) are about two-thirds of a standard deviation lower than whites. Of course, these differences are sharply reduced after adjustment for other background factors. Nevertheless, the data taken at face value seem to indicate that blacks are less ambitious.

Now let us consider what it means to have a low score on the ambitious job attitudes index. The index is composed of two ingredients—the scale indicating preference for "a job that pays off" and the scale showing preference for "a job that doesn't bug me." Considering the way the index was computed, a young man could have a low ambition score because he has low preference for "a job that pays off," or because he has high preference for "a job that doesn't bug me," or both. Our interpretation of racial differences depends a good deal on which of the above explanations applies to most black respondents. The necessary data were obtained from two additional multiple classification analyses, one predicting to the "job that pays off" scale and the other predicting to the "job that doesn't bug me" scale.

The results from these analyses are unambiguous. There are scarcely any racial differences in preferences for "a job that pays off," with those in integrated schools scoring just above whites and those in segregated schools scoring slightly below whites (Eta = .08). Racial differences do appear when we consider preferences for "a job that doesn't bug me." Along this dimension we find integrated blacks more than one-third standard deviation higher than whites; for northern segregated blacks the difference exceeds one-half standard deviation, and for southern segregated blacks the difference reaches three-quarters of a standard deviation (Eta = .19).

What can we conclude from these findings? First, it seems fairly clear that blacks show no less interest than whites in good, attractive jobs "that pay off." But should we also conclude that blacks are less willing to work hard, take responsibility, and so forth? We think that would be a very faulty reading of the data. The only substantial racial difference we've found here is that blacks consider it especially important to have a job where they are not "bossed," where they don't have to work too hard, and where they don't get dirty—a job that is approved by their friends. Certainly this is the sort of attitude that might arise in reaction to generations of discrimination in jobs—discrimination which resulted in black men holding relatively mean, dirty, and physically strenuous jobs. The young black high school student probably knows better than most whites what it means to have "a job that *does* bug me," and avoiding that sort of job seems more important to him than to the average white. In our view, it is likely that some of the items on the "job that doesn't bug me" scale mean something very special to black respondents, and that this, more than anything else, accounts for the racial differences we have observed here.

Internal Versus External Control of One's Fate

Rotter (1963, 1966) has distinguished between individuals who perceive that they themselves control their fate (internal control) and those who feel they are controlled by outside events (external control). With race and intelligence held constant, Rotter (1966) found the perception of internal control to be positively related to social class, based on a national sample of children. Coleman (1966) found that "the extent to which an individual feels that he has some control over his own destiny" (p. 23) is an important predictor of school achievement.

Twelve items from Rotter's (1966) I-E (internal-external) Scale were included in the questionnaire in order to measure the dimension of personal control. (For a listing of items, see Bachman, et al., 1967; for items plus response distributions, see Arscott, 1968.) The resulting index of *internal control* is positively correlated with a number of dimensions discussed earlier: ambitious job attitudes (r = .38), social values (r = .35), and self-esteem (r = .23).

Background Factors Related to Internal Control. The relationships between internal control and background factors are summarized in Table 8-4. Once again we find the family relations measure to be the strongest predictor (Eta = .29); the better the family relations a respondent reports, the greater his feeling that he personally controls his own fate. Socioeconomic level shows a smaller positive effect (Eta = .18), and one that is reduced by half after adjustment for other predictors. This represents a very weak replication of Rotter's (1966) finding that social class relates positively to internal control.

Internal control is positively related to intellectual ability. Its correlation with the Gates Test of Reading Comprehension (described in Chapter 4) is somewhat higher (r = .31) than its correlation with the Quick Test (r = .22). This may simply indicate a limitation of the instrument for measuring internal control, a bias related to reading skill. But it could also be indicating that reading skill really is important to feelings of personal control among our respondents; in high school the boy who can read well is more likely to be "in control of the situation" than is the poor reader.

Turning to racial differences in internal control, we find that southern segregated blacks are about one-half standard deviation lower than whites, whereas blacks in integrated schools and northern segregated schools have the same scores as whites. As the data presented in Table 8-4 indicate, very little racial difference remains in internal control after adjusting for other factors (through Multiple Classification Analysis).

Patricia Gurin and her colleagues (Gurin, et al., 1969) have recently found that among black college students it was useful to distinguish between two attitudes a person may hold: the idea that people in general control their own lives, and the idea that he controls his own life. A person who has been the victim of discrimination may feel that people in general do control their own lives (high internal control attitude) but feel that he personally has much less control of his own life (low internal control attitude). This distinction has sometimes been reflected in different responses to items in the Rotter I-E Scale, depending on whether the items are phrased in the first person ("In my case,

TABLE 8-4

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO TOTAL INTERNAL CONTROL

	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.18	.033	.12	.014	.08	.007
Number of Siblings	.13	.017	.04	.002	.04	.001
Broken Home	.08	.007	.03	.001	.02	.001
Family Relations	.29	.086	.27	.074	.26	.068
Religious Preference	.08	.006	.06	.004	.07	.005
Family Political Preference	.06	.003	.02	.000	.02	.000
Community Size	.07	.005	.05	.003	.05	.003
Race (Five-Category)	.13	.018	.07	.006	.04	.002
Quick Test of Intelligence	.23	.055			.17	.027
			$R = .327$		$R = .355$	
			$R^2 = .107$		$R^2 = .126$	
			Percent Variance Explained = 12.3		Percent Variance Explained = 14.4	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

getting what I want has little or nothing to do with luck") or the third person ("Becoming a success is a matter of hard work, luck has little or nothing to do with it").

Among the 12 items from the Rotter scale used in the present study are all 5 of the first-person items which Gurin, et al., identify as the "personal control" factor, and 7 of the 13 third-person items they identify as the "control ideology" factor. Preliminary analyses carried out with separate indexes for first-person items and third-person items produced essentially the same pattern of racial differences as was found for the index based on all items. Thus it appears that the first-person versus third-person distinction is not necessary for the analyses presented in this monograph.

Attitudes of Trust

It is hard to define, much less measure, such attitudinal dimensions as faith in one's fellow man or trust in social institutions. Nevertheless, in this section we examine two measures of this sort, *trust in people* and *trust in the government*. We will first describe the two scales separately, then discuss jointly their relationship to background factors.

Trust in People. This scale consists of three items developed in the Political Behavior Program of the Survey Research Center. They have been used in cross-sectional interview studies of adult Americans in 1964 and 1968 (see Robinson, et al., 1969, for a discussion of the scale and its use in election studies), and in a questionnaire used to study the political socialization of high school seniors in 1965 (Jennings and Niemi, 1968a; Jennings and Niemi, 1968b; Jennings and Levinson, 1968). Table 8-5 presents the item versions used in our questionnaire, along with response distributions from our study and the national interview studies.

The differences in Table 8-5 suggest that the tenth-grade boys in our sample have somewhat less trust in people than do adults. Of course, this difference could be due entirely to the fact that our respondents used questionnaires while the adults responded to interview questions; it may be harder to tell an interviewer that you don't trust people than to check such statements on a questionnaire. It is possible, however, that the differences are real, and reflect the norms of present adolescent society.

Trust in the Government. This scale, like the last one, comes out of the work of the Political Behavior Program of the Survey Research Center (Robinson, et al., 1969; Jennings and Niemi, 1968a and b; Jennings and Levinson, 1968). The three items

TABLE 8-5

TRUST IN PEOPLE SCALE

(* indicates trusting response)

I MORE STRONGLY BELIEVE THAT:	Tenth-grade Boys (1966)	National Samples of Adults[a] (1964)	(1968)
*Most people can be trusted.	43%	54%	56%
You have to be very careful before trusting people.	54%	46%	44%
*Most people try to be helpful.	53%	57%	60%
Most people are just looking out for themselves.	45%	43%	40%
Most people would take advantage of you if they had a chance.	46%	30%	31%
*Most people try to be fair, even when they wouldn't have to be.	52%	70%	69%
Missing Data	2-3%		
Average number of trusting responses	1.52	1.78	1.87

[a] Data from Robinson, et al., (1969), pp. 530-532.

presented in Table 8-6 ask whether the government wastes much tax money, whether it can be trusted to do what is right, and whether the people running the government know what they are doing. Our questions used different response stems than those used by Jennings, so precise comparisons of the two sets of data are not possible. Nevertheless, our data from tenth-grade boys seem fairly consistent with the Jennings study of high school seniors. The young people in both samples think the people in government usually or almost always know what they are doing and can be trusted to do what is right, but they also think the government wastes at least some tax money.

Background Factors Related to Attitudes of Trust. The two scales described above are only modestly correlated (r = .18). They do show, however, some similarities and differences that make it useful to discuss them jointly. The first similarity worth mentioning is that both trust dimensions are positively correlated with the family relations scale; the better a young man rates his family relations, the more faith he has in others (Eta = .14) and the more he trusts the government (Eta = .28).

TABLE 8-6
TRUST IN THE GOVERNMENT SCALE

	Percentage Frequencies
Do you think the government wastes much of the money we pay in taxes?	
Nearly all tax money is wasted	5
A lot of tax money is wasted	25
Some tax money is wasted	40
A little tax money is wasted	23
No tax money is wasted	5
How much of the time do you think you can trust the government in Washington to do what is right?	
Almost always	28
Often	44
Sometimes	23
Seldom	3
Never	1
Do you feel that the people running the government are smart people who usually know what they are doing?	
They almost always know what they are doing	30
They usually know what they are doing	48
They sometimes know what they are doing	17
They seldom know what they are doing	3
They never know what they are doing	1

Attitudes of trust related to religious background are summarized in Table 8-7. Robinson, et al., (1969, p. 530) note that the national samples of adults in 1964 and 1968 provide some support for the general finding that ". . . people belonging to Fundamentalist religions share a pessimistic credo about their fellow man." Our own data are consistent with this finding; Baptists and members of the Church of Christ show the lowest trust in people among Protestants, while Methodists and Episcopalians show the highest. (The findings among Protestants for the trust in government scale show a parallel pattern, but it is very weak.) Catholics are just above average on both trust scales, a finding that matches the data on adults.

The largest surprise in our religious data involves Jewish respondents. Among Jewish adults, trust in people was well above the national average in both 1964 and 1968 (Robinson, et al., 1969). In our sample of tenth-graders, however, Jewish boys were far below any other group on this dimension; they checked an average of only one out of three trusting responses. On the other hand,

TABLE 8-7

ATTITUDES OF TRUST RELATED TO RELIGIOUS BACKGROUND

	Trust in People	Trust in the Government
Scale Range:	0-3	1-5
Mean:	1.52	3.67
Standard Deviation:	1.10	.66
Religious Belief:		
Jewish	1.00	3.83
Roman Catholic, Eastern Orthodox	1.59	3.75
Baptist	1.38	3.60
Churches of Christ, Disciples of Christ, United Church of Christ	1.41	3.64
Lutheran	1.49	3.63
Methodist	1.75	3.68
Presbyterian	1.63	3.71
Episcopal	1.68	3.73
Other Protestant	1.60	3.62
Other and Missing Data	1.43	3.64
	(Eta = .14)	(Eta = .09)

they were above any other religious category in their trust of the government. These findings are puzzling; later in the chapter we will discuss them further.

We considered it quite possible that there would be some differences in trust of the government related to family political preference, since Republicans are thought to be more wary of government (especially the government in Washington) than are Democrats. The results, however, show no difference worth reporting (Eta = .06).

Differences among racial groups do exist. These differences do not account for very much of the total variance in trust scores, because the largest effects involve the numerically small subgroup of blacks in integrated schools. Nevertheless, the findings will help us gain further perspective on attitudes of trust by members of minority groups. Table 8-8 summarizes differences in trust among racial subgroups. The data for blacks in integrated schools

TABLE 8-8

RACIAL DIFFERENCES IN ATTITUDES OF TRUST

	Trust in People	Trust in the Government
Scale Range:	0-3	1-5
Mean:	1.52	3.67
Standard Deviation:	1.10	.66
Racial Subgroup:		
White	1.54	3.66
Integrated Black	1.08	3.88
Northern Segregated Black	1.19	3.58
Southern Segregated Black	1.36	3.69
Other Racial Minorities	1.46	3.70
	(Eta = .09)	(Eta = .06)

parallel the data for Jewish respondents; compared with the other racial subgroups, integrated blacks have the lowest trust in people and the highest trust in government.

The parallel findings for Jewish respondents and blacks in integrated schools suggest that these minority group members do feel that people may take advantage of them and that they must be very careful before trusting people. At the same time, they seem to have a greater than average trust in what government can do—perhaps because government is seen as a defender of minority rights. Of course, these interpretations are no more than hypotheses. Moreover, the differences among religious and racial groups are not large; indeed, one could argue that the *similarities* in trust are more impressive than the differences, especially in light of the discrimination that some minority group members have experienced. We have presented and discussed these relationships in the hope that they will stimulate others, with larger samples of minority groups, to explore them further.

Political Interest and Knowledge

It is one thing to trust the government, and quite another thing to be interested and informed about government and current events. On the whole, the tenth-grade boys in our sample report a moderate level of interest in answer to the following questionnaire item: "Some people think about what's going on in government very often, and others are not that interested. How much of an interest do you take in government and current events?" Only 1 percent admit to having no interest at all, while 12 percent say they have very little interest. There are 44 percent who report some interest, 27 percent a lot of interest, and 14 percent a very great interest.

Of course, a young man with a high interest in government and current events is also likely to have some information about public figures. Accordingly, we developed a short and simple measure of *political knowledge*, presented in Table 8-9. It seems clear from the frequency of incorrect responses that most tenth-grade boys have at best limited political knowledge. In the fall of 1966, virtually all of them could name Lyndon Johnson as President, but only about half could name Dean Rusk as Secretary of State, and only one in four could name the two U. S. Senators from his State.

Background Factors Related to Political Knowledge. Table 8-10 summarizes the prediction to political knowledge from family background and intelligence. The summary statistics at the bottom of the table indicate a good deal of predictability for what amounts to only a four-item test. (Since the first question was answered correctly by practically everyone, the only discrimination comes from the remaining four items.) Background factors plus intelligence show a multiple correlation of .45 with this criterion.

The strongest single predictor of political knowledge is, of course, intelligence. The Quick Test shows a positive correlation ($r = .36$). (The GATB-J, which is a more specific measure of vocabulary and verbal skills, shows a somewhat stronger positive relationship; $r = .45$). Perhaps about half of the effects of intellectual ability on political knowledge can be viewed as the effects of intelligence as an intervening variable between background factors and the criterion (see Figure 4-12, arrow B).

Among family background characteristics, socioeconomic level is the strongest predictor to political knowledge (Eta = .28). Boys from the most advantaged homes average 3.3 correct answers, while the average is 2.1 for those from the lowest socioeconomic category. Family size shows a similar effect (Eta = .20); boys with just one sibling average 3.0 correct, whereas the average is 2.0 for those with seven or more siblings.

The effect of a broken home is not large (Eta = .09), and it becomes much smaller after other background factors are controlled. Political knowledge scores average 2.7 in families that are intact, and 2.3 in those disrupted by divorce or separation. The measure of family relations shows only a small association

TABLE 8-9

POLITICAL KNOWLEDGE SCALE

Item Content		Percentage Frequencies
Who is the President of the United States?		
	Correct answer	97
	Incorrect answer	--
	Missing data	3
Who is the U.S. Secretary of State?		
	Correct answer	48
	Incorrect answer	9
	Missing data	43
Who is the U.S. Secretary of Defense?		
	Correct answer	58
	Incorrect answer	4
	Missing data	38
Who are the two U.S. Senators from your state?		
First Mention:	Correct answer	38
	Incorrect answer	15
	Missing data	47
Second Mention:	Correct answer	24
	Incorrect answer	9
	Missing data	67

The POLITICAL KNOWLEDGE score is the sum of the correct answers given to the questions above. A perfect score is 5. No missing data restrictions.

Mean . . . 2.61
Standard Deviation . . . 1.46

TABLE 8-10

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO POLITICAL KNOWLEDGE

	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.28	.078	.18	.033	.11	.011
Number of Siblings	.20	.039	.11	.011	.08	.006
Broken Home	.09	.008	.04	.001	.03	.001
Family Relations	.16	.025	.10	.009	.08	.007
Religious Preference	.22	.051	.15	.022	.14	.019
Family Political Preference	.17	.028	.12	.013	.11	.012
Community Size	.14	.021	.08	.006	.07	.004
Race (Five-Category)	.08	.007	.05	.002	.12	.013
Quick Test of Intelligence	.36	.130			.31	.095
			R = .366		R = .448	
			R^2= .134		R^2= .201	
			Percent Variance Explained = 15.0		Percent Variance Explained = 21.7	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

with political knowledge (Eta = .16), and it is difficult to interpret. The relationship is basically the same curvilinear pattern as is displayed in Figure 4-4 (which shows mean Quick Test scores for each category of family relations). The rather skeptical discussion of that relationship in Chapter 4 applies equally well here; we suspect the relationship is largely an artifact.

Religious preference shows a fairly substantial relationship with political knowledge (Eta = .22), although the relationship is reduced somewhat after adjustments for other background characteristics and intelligence. Figure 8-3 presents the religious differences in political knowledge. The largest effect, and the only one that remains after adjustment for other factors, is that Jewish respondents know their political leaders much better (4.0 correct answers) than the average tenth-grade boy (2.6 correct). This superior political knowledge is all the more interesting when we recall that Jewish respondents also show the highest levels of trust in the government. Apparently it is not a blind trust.

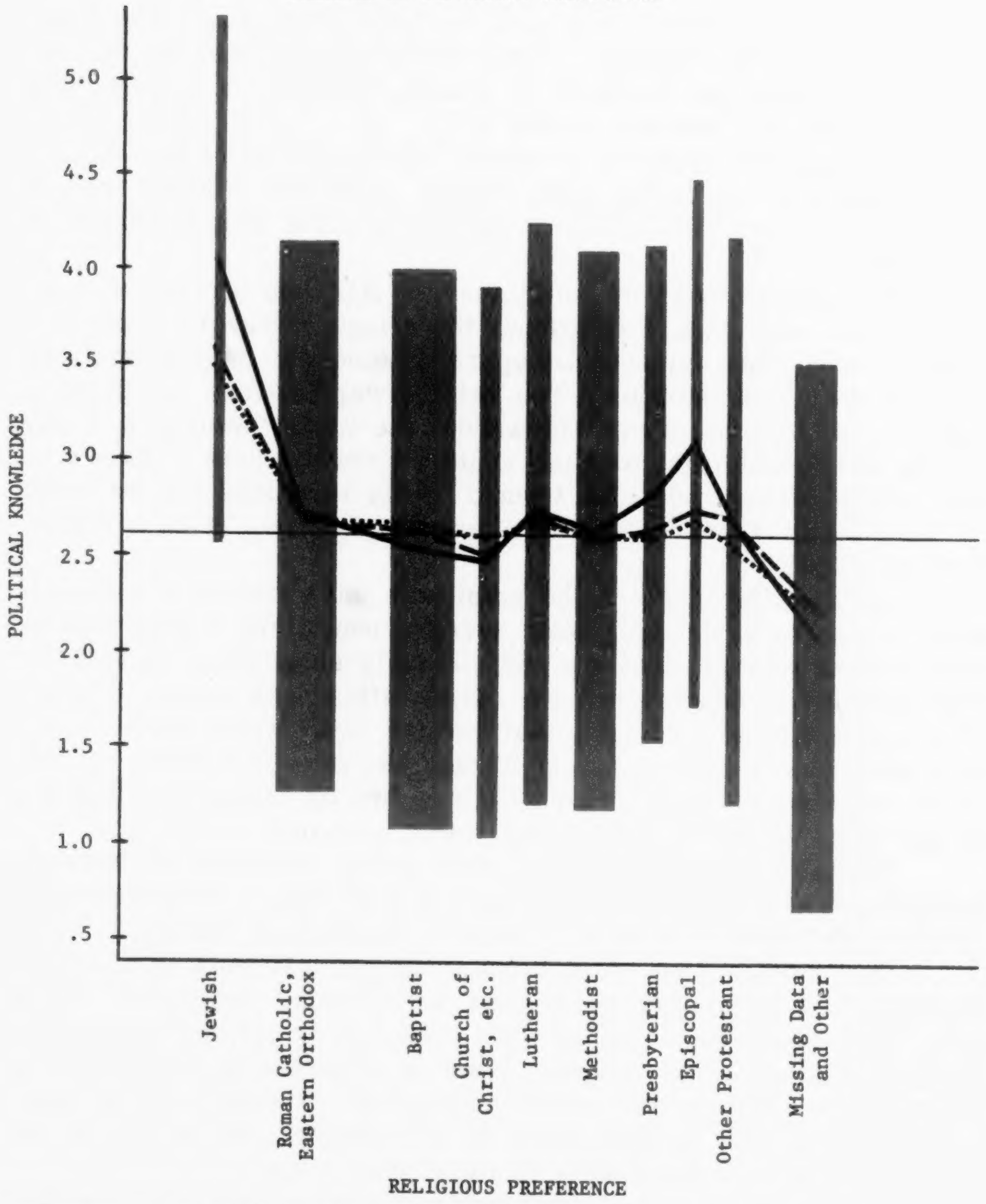
There are only slight differences in political knowledge depending on whether a boy's family is Republican or Democrat, and these differences all but disappear after adjusting for differences in other background factors and intelligence. A more substantial difference involves those who could not be placed on the Republican-Democrat continuum, most often because the respondent did not know the political preference of one or both parents. It is scarcely surprising that the mean score for the category including these boys is noticeably lower (2.3) than the average score for boys whose parents' political preference could be classified on the Republican-Democrat continuum (2.8).

Community size shows some small differences in political knowledge (Eta = .14); scores are lowest for boys raised on a farm, and next lowest for those raised in the country but not on a farm. The differences that appear are just about the same as the differences in Quick Test scores noted in Chapter 4. Accordingly, very little of the community size differences remain after adjustment for intelligence and other background factors.

Racial differences in political knowledge are quite small. Integrated blacks are identical to whites in their political knowledge, and blacks in segregated schools are only slightly lower. When we consider the fairly strong correlations between political knowledge and such factors as socioeconomic level and the Quick Test, it is perhaps surprising that blacks score so high. Indeed, after adjustment for these factors in Multiple Classification Analysis, it appears that blacks (particularly those in southern segregated schools) have political knowledge scores *relatively higher* than whites.

FIGURE 8-3

POLITICAL KNOWLEDGE
RELATED TO RELIGIOUS PREFERENCE



━━━connects unadjusted subgroup means (Eta = .22).

-·━connects means adjusted for family background factors (Beta = .15).

······connects means adjusted for family background plus intelligence (Beta = .14).

Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.

See Appendix E for further information and for data underlying figures.

Summary

In this chapter dealing with values and attitudes there are several instances where racial and religious subgroups differ substantially from the average. There are also a number of positive correlations with the measure of family relations, a pattern that appeared also in Chapters 6 and 7.

A composite measure of social values is one of the dimensions strongly correlated with family relations. Social values scores also show a tendency toward a positive correlation with intelligence.

A summary index of ambitious job attitudes correlates positively with good family relations; the effect, however, is not entirely linear, since those who report the poorest family relations are not lowest in ambition. The relationship between intelligence and job ambition is straightforward: the more intelligent a boy is, the more ambitious are his attitudes toward jobs. There are also fairly strong tendencies toward highly ambitious job attitudes in Jewish and Episcopalian families, and families at high socioeconomic levels.

Racial differences in the ambitious job attitudes scale have been traced to a stronger than average sensitivity among blacks when it comes to jobs that are dirty, closely supervised, and otherwise potentially unpleasant. No racial differences appear in positive attraction toward jobs that involve self-development, self-utilization, and a chance to get ahead. We interpret these differences and similarities to indicate a reaction by blacks to a history of job discrimination rather than lower ambition.

A short version of the Rotter (1969) measure of internal control, or control over one's fate, is positively correlated with family relations and with measures of intellectual ability.

Two measures of trust, trust in people and trust in the government, are positively correlated with family relations. They also show some relationship with religious belief; in particular, Jewish respondents have higher trust in government but (contrary to previous findings with adult respondents) low trust in people. A similar pattern of high trust in government and low trust in people appears among blacks in integrated schools.

A very short test of information about political figures relates to intelligence and to a number of family background factors. Here the Jewish respondents are outstanding; their political knowledge scores are a full standard deviation above the overall average.

Chapter 9

BEHAVIORS

The behaviors of greatest interest in the Youth in Transition study are not yet available for analysis. Such behaviors include whether a boy drops out of high school or graduates, whether he enters a college or work role of his choice, and how well he succeeds in his post-high school environment. The present chapter on behaviors must be limited to three dimensions that were measured as our subjects entered tenth grade: delinquent behaviors, rebellious behavior in school, and scholastic achievement (grades).

Delinquent Behaviors

"Almost all of the research on delinquency begins in the official records of police, courts, and institutions. A large number of delinquent acts and the identities of children who committed them are unrecorded in these sources. In addition, they may not accurately reflect the distribution of delinquency by sex, social status, race, and other variables" (Gold, 1966, p. 27).

The above statement by Gold indicates one of the reasons for including delinquent acts among the behaviors studied in this project—there is a lack of survey data in this area. Extensive work now being carried out by Gold and his colleagues, supplemented by the present data on a national sample of high school boys, should do much to remedy this situation.

A second reason for studying delinquent acts goes beyond the current need for descriptive data in this area. Delinquent behavior is an important part of the experience of some young men. It is also likely that this sort of behavior is influenced by social environments, including family, school, and job.

Our measure of *delinquent behaviors* was adapted directly from one used by Gold (1966). A 26-item checklist was administered as a separate questionnaire, with special instructions that emphasized the complete confidentiality of the information. The checklist and instructions are presented in Table 9-1, along with response distributions for each item.

The behaviors covered in the checklist range from rather innocuous things like staying out too late (question 1) to very seri-

TABLE 9-1

CHECKLIST OF DELINQUENT BEHAVIORS

The questions on the next two pages deal with a part of teenagers' lives we don't know very much about -- things they do which may be against the rules or against the law. The questions here are about things other boys have told us they've done which could get them in trouble.

Some of these things may be difficult for you to answer; they may be things you've told very few people. But, if we're going to understand boys all across the country, then each person must answer as honestly as he can.

Remember, no one outside the research staff will see your answers. This sheet will have only a number to identify it and your name won't be used with it.

WHEN YOU HAVE FINISHED THIS SECTION, FOLD THE QUESTIONS, PUT THEM IN THE SPECIAL ENVELOPE AND SEAL IT. REMEMBER, EVERYTHING YOU WRITE DOWN IS COMPLETELY CONFIDENTIAL -- NO ONE AT SCHOOL OR HOME WILL KNOW YOUR ANSWERS!

Here are a number of things which you might do that could get you into trouble. Please tell us how many times you have done these things in the last three years -- say since you started the seventh grade. For each question, put a check in the box next to the answer that is true for you.

	In the last three years, how often have you done this?				
	5 or more times	3 or 4 times	Twice	Once	Never
1. Stayed out later than parents said you should	44	18	12	10	13
2. Got into a serious fight with a student in school	7	9	13	22	46
3. Run away from home	1	1	2	7	85
4. Taken something not belonging to you worth under $50.	9	6	9	21	52
5. Went onto someone's land or into some house or building when you weren't supposed to be there	15	13	15	21	33
6. Set fire to someone else's property on purpose.	1	1	2	4	90
7. Been suspended or expelled from school	1	1	2	8	84
8. Get something by telling a person something bad would happen to him if you did not get what you wanted	3	3	6	15	69
9. Argued or had a fight with either of your parents.	19	10	11	18	38

TABLE 9-1 (CONTINUED)

		In the last three years, how often have you done this?				
		5 or more times	3 or 4 times	Twice	Once	Never
10.	Got into trouble with the police because of something you did	3	4	6	17	66
11.	Hurt someone badly enough to need bandages or a doctor	2	2	6	16	70
12.	Damaged school property on purpose	2	3	6	13	72
13.	Taken something from a store without paying for it	10	7	11	21	48
14.	Hit a teacher	1	1	1	5	89
15.	Drunk beer or liquor without parents' permission	19	7	7	14	50
16.	Smoked in school (against the rules)	8	2	3	5	79
17.	Hit your father	2	1	1	5	88
18.	Taken a car that didn't belong to someone in your family without permission of the owner.	1	2	2	4	88
19.	Taken an expensive part of a car without permission of the owner.	1	1	1	3	90
20.	Taken part in a fight where a bunch of your friends are against another bunch	4	4	8	17	65
21.	Hit your mother	1	1	1	3	91
22.	Taken something not belonging to you worth over $50	1	1	3	5	86
23.	Had to bring your parents to school because of something you did	2	2	5	12	77
24.	Taken an inexpensive part of a car without permission of the owner.	2	1	3	5	86
25.	Skipped a day of school without a real excuse	10	6	9	15	57
26.	Used a knife or gun or some other thing (like a club) to get something from a person	1	1	1	3	91

ous matters like assault (questions 11, 14, 17, and others). The items vary not only in their seriousness, but also in their substantive nature. Some deal with disruptive or delinquent behavior in school (questions 2, 7, 12, 14, 16, 23, and 25); some focus on interpersonal aggression (questions 2, 8, 11, 14, 17, 20, 21, and 26); and some cover acts of theft and vandalism (questions 4, 5, 6, 12, 13, 18, 19, 22, and 24). Each of the above topics has been the basis for a separate sub-scale based on the items listed. Two additional sub-scales reflecting frequency and seriousness of delinquent behavior have been developed, based on the work of Gold (1966) and Sellin and Wolfgang (1964). The sub-scales are based on overlapping sets of items; they are highly correlated with each other and with a total score based on all 26 items.

Delinquent or disruptive behaviors in school during the preceding three years are admitted by a considerable number of tenth-grade boys. Half of them report getting into a serious fight with another student at least once. There were 40 percent who said they skipped at least one day of school unexcused. About one in four admits having intentionally damaged school property, while 8 percent report having hit a teacher.

Hitting a teacher and fighting with students are instances of interpersonal aggression as well as delinquency in school. Other sorts of aggression include the following: 9 percent report having hit their father during the last three years and 6 percent report having hit their mother; 33 percent report participation in group fights; and 6 percent report the use of a weapon to threaten someone.

Shoplifting is admitted by about half of the respondents, and 10 percent report doing so five or more times during the past three years. More serious thefts are less frequent: 10 percent report taking something worth more than fifty dollars, and 2 percent admit doing so more than twice. Nine percent report having taken a car (other than the family car) without permission; presumably such thefts were most often merely for "joyride" purposes, since only 6 percent admit to stealing an expensive *part* of a car.

Many of these figures are surprisingly (and somewhat depressingly) high. But do we have any way of knowing whether they are valid? Our evidence here is indirect, but promising. Gold's (1966, 1970) study of undetected delinquent behavior included an extensive effort to check on the validity of his interview data through the use of "informants"—teenagers who seemed likely to have information about the delinquency of other boys and girls. Based on this source of data, Gold reached the following conclusion: "Overall, 72 percent of the youngsters seemed to tell us everything which informants had told us; 17 percent appear to be outright concealers; the rest are *questionables*" (1966, p. 33).

Gold's interview procedure involved several features that could not be readily duplicated in our nationwide study. Perhaps most important is the fact that his interviewers were only slightly older than the respondents and were matched for sex and race. In addition, the interviews in the Gold study were very heavily focused on delinquent behaviors, whereas in our own study delinquency could be assigned only a modest portion of the total measurement effort. These considerations led us to use a questionnaire checklist rather than the interview, although we realized that our methods might produce data not at all comparable to Gold's. Such was not the case. A comparison of the response distributions in Table 9-1 with unpublished data provided by Gold and his associates indicates that the two techniques produce similar frequencies of reported delinquency. Moreover, our failure to find meaningful relationships between a total index of delinquency and race or socioeconomic level (reported below) is largely consistent with current findings by Gold and his associates.[1]

Background Factors Related to Delinquent Behaviors. We noted above that a number of different sub-scales have been developed from the 26 items in the checklist. A thorough examination of delinquency in our longitudinal analyses will need to deal with these sub-scales separately. For purposes of the present monograph, however, it was necessary to limit our analysis to a summary index based on all 26 items.

The relationships between our background measures and the summary index of delinquency can be reported very quickly. Only the family relations measure shows a meaningful association with delinquency; the better a boy gets along with his family, the less delinquency he reports (Eta = .33). The delinquency measure is unrelated to the Quick Test (Eta = .05). We find virtually no association between delinquency and socioeconomic level (Eta = .07; the product-moment measure of linear correlations is a *positive* .06). The relationship with race is even smaller (Eta = .04).

How is it that these findings are so inconsistent with data based on police and court records which indicate much higher delinquency among lower class boys? According to Gold's findings, police much more often make official records of the offenses of lower status boys. Gold interprets these findings as follows:

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[1] We are indebted to Martin Gold and Jay Williams for providing these data, and for reviewing this portion of the manuscript.

"Some judgment by the police about the ability of a family to control its son's behavior is likely to be a major factor in determining whether official action will be taken. Lower status families as a group are judged less able to keep their sons out of trouble, so official action is more often taken" (1966, pp. 38-39).

The findings in our present study are only preliminary. Hopefully they will be expanded and clarified by those specializing in the analysis of delinquency and by longitudinal analyses in later stages of the Youth in Transition project. For the present, our tentative conclusion is that family background causes of delinquency are not closely linked to social class; rather, they have to do with the quality of interpersonal relations between parents and children.

Rebellious Behavior in School

Our measurement of rebellious acts in school is similar in several respects to the measurement of delinquency. A series of 13 questionnaire items asked respondents to report whether they often or seldom engage in disruptive behavior in school, break rules, or do poor school work. A total scale of rebellious behavior in school, based on all 13 items, is highly correlated with the index of delinquency (r = .52).

Table 9-2 presents the items measuring rebellious behavior, along with response distributions. The only reverse-scored item (question 3) indicates that students only "sometimes" do their best work in school—a finding that should come as no surprise to teachers or students. "Seldom" or "never" is the most frequent response to questions about disruptions such as arguing with students or teachers, or doing things to make teachers angry. When it comes to things like being unprepared, or turning in sloppy or incomplete assignments, the frequencies tend to be slightly higher, but the modal response remains "seldom."

A majority admit to at least occasional cheating on tests. Two percent say they almost always do so, 4 percent say it happens often, 15 percent say they cheat sometimes, and 38 percent say they seldom cheat. Forty percent say that they never cheat on tests.

Background Factors Related to Rebellious Behavior in School. As in the case of delinquency, the measure of family relations is the strongest of the background predictors to rebellious behavior in school. The better a boy reports getting along with his parents, the less misbehavior he reports in school (Eta = .39). Here the parallel with delinquency ends; rebellious behavior in school does relate, at least weakly, to several additional background factors.

TABLE 9-2

CHECKLIST OF REBELLIOUS BEHAVIOR IN SCHOOL

	Percentage Frequencies				
	Almost always	Often	Sometimes	Seldom	Never
How often do you fight or argue with other students	2	6	29	51	11
How often do you argue with your teachers	1	6	19	45	28
How often do you do your best work in school	12	39	34	12	2
How often do you goof-off in class so others can't work	2	8	29	40	20
How often do you come late to school	1	3	10	36	48
How often are you late to class	1	4	12	41	41
How often do you skip classes (when against the school rules)	1	3	8	18	68
How often do you come to class unprepared	2	7	31	45	13
How often do you do things that you know will make the teacher angry	2	7	24	45	22
How often do you cheat on tests	2	4	15	38	40
How often do you turn in sloppy or incomplete assignments	1	6	28	44	19
How often do you copy someone else's assignments	2	6	24	42	25
How often are you kept after school	1	3	6	27	62

Rebellious behavior in school is somewhat greater among boys from lower socioeconomic levels (Eta = .12). It is also related to family size, but the effect appears only at the largest category; school misbehavior is almost one-half a standard deviation above average for boys with seven or more siblings (Eta = .15). Finally, rebellious behavior in school shows only a very slight negative correlation with the Quick Test (r = -.12) and a little larger one with the Gates Test of Reading Comprehension (r = -.19).

Scholastic Achievement (Grades)

The fact that a majority of tenth-grade boys admit to cheating on tests is a vivid reminder of the great importance young men attach to getting good grades. We noted in Chapter 5 that success in school (good grades) is seen as an essential key to later vocational success. In the interview segment dealing with future plans, we asked the general question, "What could *prevent* your plans from working out?" The most frequent response, mentioned by 29 percent of the respondents, was "grades not good enough" or "not enough education." The next question in the interview was more specific: "How important do you think your high school grades are in making your plans work out?" Given a choice of five categories, 73 percent chose the highest, "very important," and 18 percent chose the next category, "quite important." Considering that a much smaller proportion of these boys planned to go to college (about 58 percent), this emphasis on grades is striking.

Our measure of academic performance is based on the following question, asked early in the interview: "What is the average grade you got in your classes last year? Putting them all together, how would your grades average out?" The respondent selected a grade from a list provided by the interviewer. Since our subjects were just beginning tenth grade, their answers of course refer to the average grades they attained as students in the *ninth* grade. There is evidence that the reports of grades obtained from the respondents are quite valid and reliable. Part of that evidence involves relationships with background measures and intelligence, reported below. Further evidence comes from later data collections. There is a high degree of consistency in self-reported grades across the first three data collections in our longitudinal sequence (product-moment correlations range from .59 to .69). It was also possible to compare self-reported grades with some school records after the third data collection; the product-moment correlation is .71 (based on 920 cases). One further bit of evidence suggests that the self-reports of grades are not distorted by the need for social approval; the correlation between the Crowne-Marlowe scale and grades is -.01.

Background Factors Related to Grades. Table 9-3 relates self-reported grades (in ninth grade) to family background characteristics and intelligence. It is clear from the table that a number of dimensions are related to grades, and that the strongest relationship involves the Quick Test (Eta = .36). Other measures of intellectual ability, not shown in the table, are also good predictors of grades; product-moment correlations are .36 for the Gates Test of Reading Comprehension, and .44 for the GATB-J test of vocabulary skill.

It is useful here to consider intelligence as an intervening variable between family background characteristics and the criterion of grades. Applying the model summarized in Figure 4-12, and using data obtained from Table 8-3, we conclude that the explained variance in school grades can be assigned in three almost equal parts to the unique effects of intelligence (arrow A, in Figure 4-12), the unique effects of family background (arrow C), and the effects of family background operating through intelligence as an intervening variable (arrow B).[2] Put another way, we can say that the family background factors have about half of their impact through their more basic effect on intelligence, but the other half of their effect lies above and beyond intelligence; likewise, about half of the effect of intelligence can be traced back further to family background, but half is separate from—or in addition to—those background factors.

Socioeconomic level leads the list of family characteristics predicting to good grades (Eta = .26); boys from the highest category average about B, while those from the lowest category average between C and C+. Family size shows a smaller and negative relationship with grades (Eta = .18); there is a slight but steady decline from an average grade of B- among only children to an average grade between C and C+ for boys with seven or more siblings.

The family relations measure shows a moderate positive correlation with grades (Eta = .21). Those boys who report the poorest relations with their parents have grades averaging C+, while those with the best family relations average just above B-.

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[2] More precisely, the application of the model in Figure 4-12 would assign the 20.0 percent explained sum of squares (unadjusted for degrees of freedom) as follows: Arrow A = 7.0 percent; Arrow B = 6.8 percent; Arrow C = 6.2 percent.

TABLE 9-3

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO GRADES

	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.26	.065	.20	.039	.12	.015
Number of Siblings	.18	.031	.11	.011	.08	.006
Broken Home	.10	.011	.07	.004	.06	.004
Family Relations	.21	.042	.16	.026	.15	.022
Religious Preference	.16	.027	.09	.008	.08	.006
Family Political Preference	.11	.013	.06	.004	.05	.002
Community Size	.10	.009	.07	.006	.09	.007
Race (Five-Category)	.10	.009	.04	.001	.10	.010
Quick Test of Intelligence	.36	.128			.31	.096
			R = .338		R = .429	
			R^2 = .114		R^2 = .184	
			Percent Variance Explained = 13.0		Percent Variance Explained = 20.0	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

Jewish respondents have the highest average grade, midway between B- and B. This modest departure from the overall average is reduced considerably after adjustment for socioeconomic level and is reduced still further after adjustment for Quick Test scores. The other religious subgroups all have average grades between C+ and B-, and adjustments for other predictors make virtually no change in this picture.

It is rather difficult to make sense of racial differences in grades. Most black respondents are located in segregated schools, and thus school differences in grading practices could masquerade as racial differences. It is the case that blacks in northern segregated schools report grades that average just above C+, while those in southern segregated schools average just under C+. Adjusting for differences in family background only, the difference between segregated blacks and whites is very slightly reversed—blacks have if anything relatively *higher* grades than whites. This effect is heightened slightly if in addition we adjust for differences in Quick Test scores. The effects of such adjustments are not large however; they amount to roughly the difference between C+ and B-.

The comparison between whites and those blacks who are in integrated schools may be a bit more valid, since the black and the white grades in this case are not assigned by a completely different set of schools. Here we find a very small initial difference which is completely eliminated by adjusting for differences in socioeconomic level and other family background factors; further adjustment for Quick Test scores does not change this finding at all.

In short, there are very few differences between grades of blacks and whites, and the small differences that exist are eliminated or reversed by controlling for other background factors. In integrated schools, there are no meaningful differences between races with respect to grades.

Summary

The levels of delinquency reported by tenth-grade boys in the present study correspond fairly closely with data from studies that focus primarily on delinquent behavior. Like these other studies, we find little association between delinquency rates and such background dimensions as socioeconomic level and race. We do find a strong inverse association between family relations and delinquency; the better a boy reports getting along with his parents, the less delinquency he reports.

Items dealing with rebellious behavior in school indicate that few students engage in disruptive behaviors such as arguing with teachers or doing things to anger them. However, a majority admit to at least occasional cheating on tests. The strongest predictor of rebellious behavior in school is family relations; those who get along best with their parents are least disruptive in school. Other background factors that relate slightly to school misbehavior include socioeconomic level and number of siblings. Rebellious behavior in school is also somewhat greater among those who are lower in intelligence and reading ability.

Academic achievement, measured by self-reports of average class grade during the preceding year (ninth grade), is strongly related to measures of intelligence and academic ability, and also to family background factors. About one-third of our prediction of grades may be described as unique effects of intelligence, another third as unique effects of family background, and the remaining third as background effects operating through intelligence as an intervening variable.

The most important predictor of school grades is socioeconomic level. Also important are family size, family relations, and religious preference. Very few racial differences appear in school grades.

Chapter 10

COLLEGE PLANS AND OCCUPATIONAL ASPIRATIONS

Young men in high school consider the choice of an occupation, and related choices about educational preparation, as the most critical decisions they face (Douvan and Adelson, 1966). This conclusion from a national survey is consistent with much theoretical work, including the broad perspective of Erikson (1950, 1959), who stresses the importance of the occupational identity as a part of the total process of identity formation, and the more specific theorizing of Ginzburg (1951), Super (1957), and others.

The need for some sort of occupational identity is reflected in the fact that 85 percent of our respondents were able to provide at least a tentative occupational choice when asked "What sort of work do you think you might do for a living?" (The comparable figure from the Douvan and Adelson study is 86 percent, for their sample of boys age 14 to 16.) Of course, the occupation a boy chooses in tenth grade is often quite different from the one he actually enters a few years later. Occupational plans, as well as plans for college, undergo considerable change during the high school years. Nevertheless, the choices made early in high school do reflect directions and levels of aspiration that are far-reaching in their implications. In particular, the *status* of aspired occupation, if not the specific occupational content, shows a good deal of stability during the high school years. (We will have more to say about this matter of stability in the final chapter.)

Occupational Aspirations

Midway through the interview, the respondents were asked "What sort of work do you think you might do for a living?" As we noted above, 85 percent mention some specific occupation or occupational category in response to this question. These responses were coded and converted to the Duncan socioeconomic status index (Reiss, 1961).

The mean Duncan scale value of the boys' aspired occupations is 60, with a standard deviation of 26; this is considerably higher than the mean Duncan value of 38 for their fathers' occupations. Fully half of all our respondents (and well over half of those stating an occupational preference) aspire to a professional or technical career. Teaching and engineering were the specific occupations most frequently mentioned by the boys (by 5 percent and 4 percent, respectively).

Some of these aspirations are unrealistically high. We have recently reported elsewhere (Johnston and Bachman, 1969) that aspirations among the non-college-bound show a decline between tenth and twelfth grades; so by the end of high school the discrepancy between father's occupation and son's aspired occupation is not quite so great as that reported above. There will, of course, be further adjustments in aspiration, often in a downward direction; and, in addition, occupational attainments will often be somewhat lower than aspirations.

In spite of the unrealism noted above, the occupational aspirations reported by most tenth-grade boys are not, in our view, highly unrealistic. The generation represented by these boys will surely attain higher occupational levels than their fathers, on the average; the advance of technology and greater opportunities for higher education will see to that.

College Plans

The next questions in the interview sequence, following the item about occupational aspiration, were designed to discover plans for college. Those respondents who stated an occupational preference were asked, "How do you plan to get into this sort of work?" Those who did not state an occupational preference were asked what they expected to do after high school. Slightly more than half of those responding to each of these questions said they planned to enter college; a total of 58 percent of the sample aspire to college or some other form of post-high school education (e.g., technical school). (For purposes of the present analyses, a simple dichotomous variable was constructed indicating whether a respondent did, or did not, state a plan to enter post-high school education.) This total of 58 percent is not at all inconsistent with current statistics concerning the proportion of young men who actually do go on to post-high school education.

Intelligence as a Determinant of Plans and Aspirations

It will be convenient in this section, and throughout the rest of this chapter, to discuss college plans and occupational aspiration jointly. One reason for doing so is that they are closely interrelated in the actual plans a young man makes—quite often the primary reason for going to college is to attain a specific occupation or to qualify for a certain level of occupation. Another reason for treating college and occupational plans jointly is that they are highly correlated (Eta = .59), and they show very similar relationships with background predictors.

Table 10-1 shows the predictions from background factors and intelligence to both status of occupational aspirations (Part A) and college plans (Part B). Aspired occupation, a continuous variable, is somewhat more predictible than is the dichotomous variable, college plans (multiple R's are .50 and .40, respectively); however, the overall pattern of relationship is closely parallel for the two criteria, as a comparison of Parts A and B of Table 10-1 indicates.

Now let us consider the role of intelligence as a determinant of college and occupational plans. A glance at Table 10-1 indicates that the Quick Test is a strong predictor of both criteria. Figure 10-1 presents graphically the relationship between the Quick Test and occupational aspirations. The other measures of intellectual ability (the GATB-J test of vocabulary and the Gates reading test) show the same strength of relationship as does the Quick Test; any one of these measures used alone can account for about 14 percent of the variance in occupational aspiration and about 9 percent of the variance in college plans. When *added* to the family background dimensions as a predictor, the Quick Test can explain uniquely about 5 percent of the variance in occupational aspiration and about 4 percent of the variance in college plans. This is an important increment, but it is not larger than we might have expected, given the importance of intelligence for academic and occupational success.

If we apply the total predictive model first introduced in Figure 4-12, we conclude that much of the relationship between intelligence and future plans can be viewed as the effects of family background functioning through intelligence as an intervening variable. A summary of the model, as applied to the prediction of college plans and occupational aspirations, is presented in Figure 10-2. If we consider the total amount of *explained* variance in plans or aspirations as equal to 100 percent, then we can assign portions of that explained variance as follows: 20 percent of our explanation is in terms of the unique effects of intelligence, that part of intelligence that cannot be traced back to family background as we have measured it (arrow A); 30 percent of our explanation is in terms of family background variables that have their effect through intelligence as an intervening variable (arrow

TABLE 10-1A

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO OCCUPATIONAL ASPIRATIONS

	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	$Beta^2$	Beta	$Beta^2$
BACKGROUND PREDICTORS:						
Socioeconomic Level	.37	.134	.26	.067	.20	.041
Number of Siblings	.27	.071	.14	.019	.10	.010
Broken Home	.07	.005	.02	.000	.02	.000
Family Relations	.16	.025	.11	.012	.10	.009
Religious Preference	.18	.033	.08	.007	.07	.005
Family Political Preference	.11	.011	.06	.004	.06	.004
Community Size	.29	.084	.19	.037	.18	.034
Race (Five-Category)	.13	.018	.04	.002	.12	.014
Quick Test of Intelligence	.37	.138			.27	.074
			$R = .449$		$R = .500$	
			$R^2 = .201$		$R^2 = .250$	
			Percent Variance Explained = 22.0		Percent Variance Explained = 26.9	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
$Beta^2$ is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

TABLE 10-1B

MULTIPLE CLASSIFICATION ANALYSIS OF BACKGROUND FACTORS PREDICTING TO COLLEGE PLANS

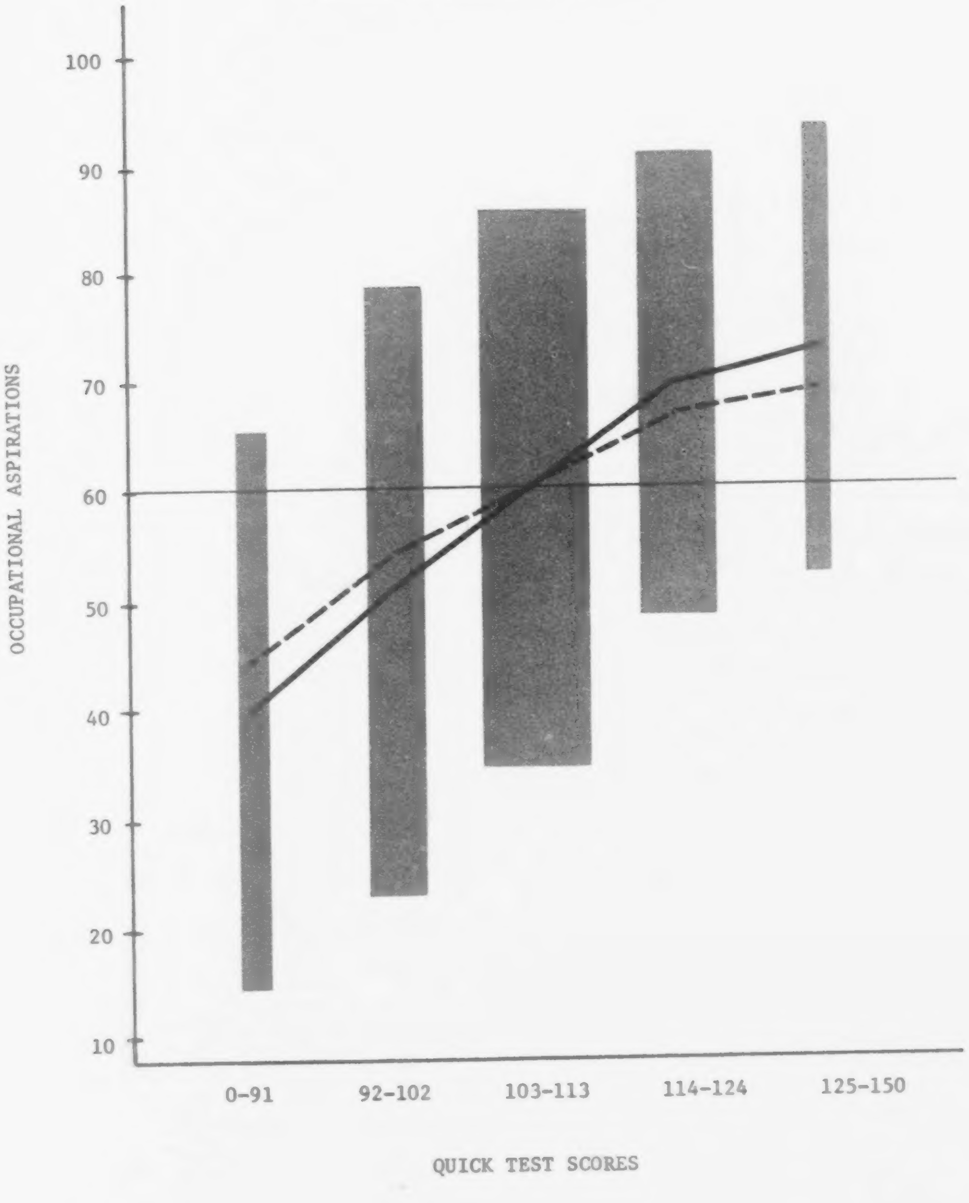
	PREDICTING FROM EACH CHARACTERISTIC SEPARATELY		PREDICTING FROM 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY		PREDICTING FROM QUICK TEST AND 8 BACKGROUND CHARACTERISTICS SIMULTANEOUSLY	
	Eta	Eta^2	Beta	Beta^2	Beta	Beta^2
BACKGROUND PREDICTORS:						
Socioeconomic Level	.30	.089	.25	.064	.20	.038
Number of Siblings	.18	.031	.08	.007	.06	.004
Broken Home	.09	.009	.05	.002	.04	.002
Family Relations	.16	.025	.11	.013	.10	.011
Religious Preference	.15	.021	.08	.006	.08	.006
Family Political Preference	.07	.005	.05	.003	.04	.002
Community Size	.18	.033	.12	.014	.11	.012
Race (Five-Category)	.06	.004	.07	.005	.12	.015
Quick Test of Intelligence	.30	.089			.23	.053
			$R = .354$		$R = .403$	
			$R^2 = .125$		$R^2 = .163$	
			Percent Variance Explained = 14.1		Percent Variance Explained = 17.9	

Eta is the correlation ratio unadjusted.
Eta^2 is the explained sum of squares unadjusted.
Beta is the correlation ratio adjusted for effects of other predictors.
Beta^2 is the explained sum of squares adjusted for effects of other predictors.
R is the multiple correlation coefficient corrected for degrees of freedom.
R^2 indicates the proportion of variance in the dependent variable explained by all predictors together after correcting for degrees of freedom.
The *Percent Variance Explained* is the percentage of variance in the dependent variable explained by all predictors together with no correction for degrees of freedom.

For further description of these statistics, see the section on Multiple Classification Analysis in Chapter 4.

FIGURE 10-1

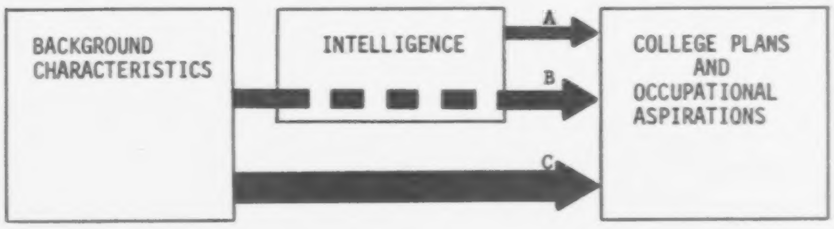
OCCUPATIONAL ASPIRATIONS
RELATED TO QUICK TEST SCORES



——— connects unadjusted subgroup means (Eta = .37).
– – – connects means adjusted for family background factors (Beta = .27).
Shaded bars have width proportionate to subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 10-2

IMPACT OF BACKGROUND AND INTELLIGENCE ON COLLEGE PLANS AND OCCUPATIONAL ASPIRATIONS


BACKGROUND CHARACTERISTICS
INTELLIGENCE
COLLEGE PLANS AND OCCUPATIONAL ASPIRATIONS
A
B
C

B); and fully 50 percent of our explanation of plans or aspirations is in terms of unique effects of family background, effects that occur quite apart from intelligence as we have measured it (arrow C).[1]

We remain cautious about a very literal interpretation of these percentages of explained variance. If we have done a better job of measuring intelligence than background factors, the relative importance of intelligence will be overestimated. Conversely, if our several measures of family background are better than the single measure of intelligence used, we will underestimate the relative importance of intelligence. For these and other reasons, the model in Figure 4-12, and the present application summarized in Figure 10-2, are provided only as general guides to the interpretation of our data.

The general conclusion we draw from Figure 10-2 is that intelligence plays an important role in the determination of college and occupational plans. Some of its effect is unique and cannot be traced back to family background. But an equal, if not larger, part of the role of intelligence is as an intervening variable—the path through which some aspects of family background (both hereditary and environmental) get translated into an impact on future plans. In brief, family background affects ability which in turn affects future plans.

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[1] The application of the model in Figure 4-12 to the data in Table 10-1 provides the following data. The 27.0 percent explained variance in occupational aspiration (unadjusted for degrees of freedom) is assigned as follows: Arrow A = 5.0 percent; Arrow B = 8.8 percent; Arrow C = 13.2 percent. The 17.9 percent explained variance in college plans (unadjusted for degrees of freedom) is assigned as follows: Arrow A = 3.8 percent; Arrow B = 5.1 percent; Arrow C = 9.0 percent.

Much of the impact of family background does not, however, seem to operate through intelligence. This is the second conclusion to be drawn from Figure 10-2. After giving intelligence its full due, we find that background has a very large role remaining. Put more simply, this means that if two boys are equal in intelligence, their plans for the future may still be quite different, and family background is among the major causes of such differences.

Family Background Determinants of Plans and Aspirations

As Table 10-1 indicates, college plans and occupational aspirations are related to many of the family background dimensions. We will examine each of these relationships in turn.

Socioeconomic Level. Figure 10-3 displays the strong positive relationship between SEL and occupational aspirations (Eta = .37). Controlling for other background factors and intelligence diminishes this effect, as the dashed and dotted lines indicate; nevertheless, the relationship that remains is substantial.

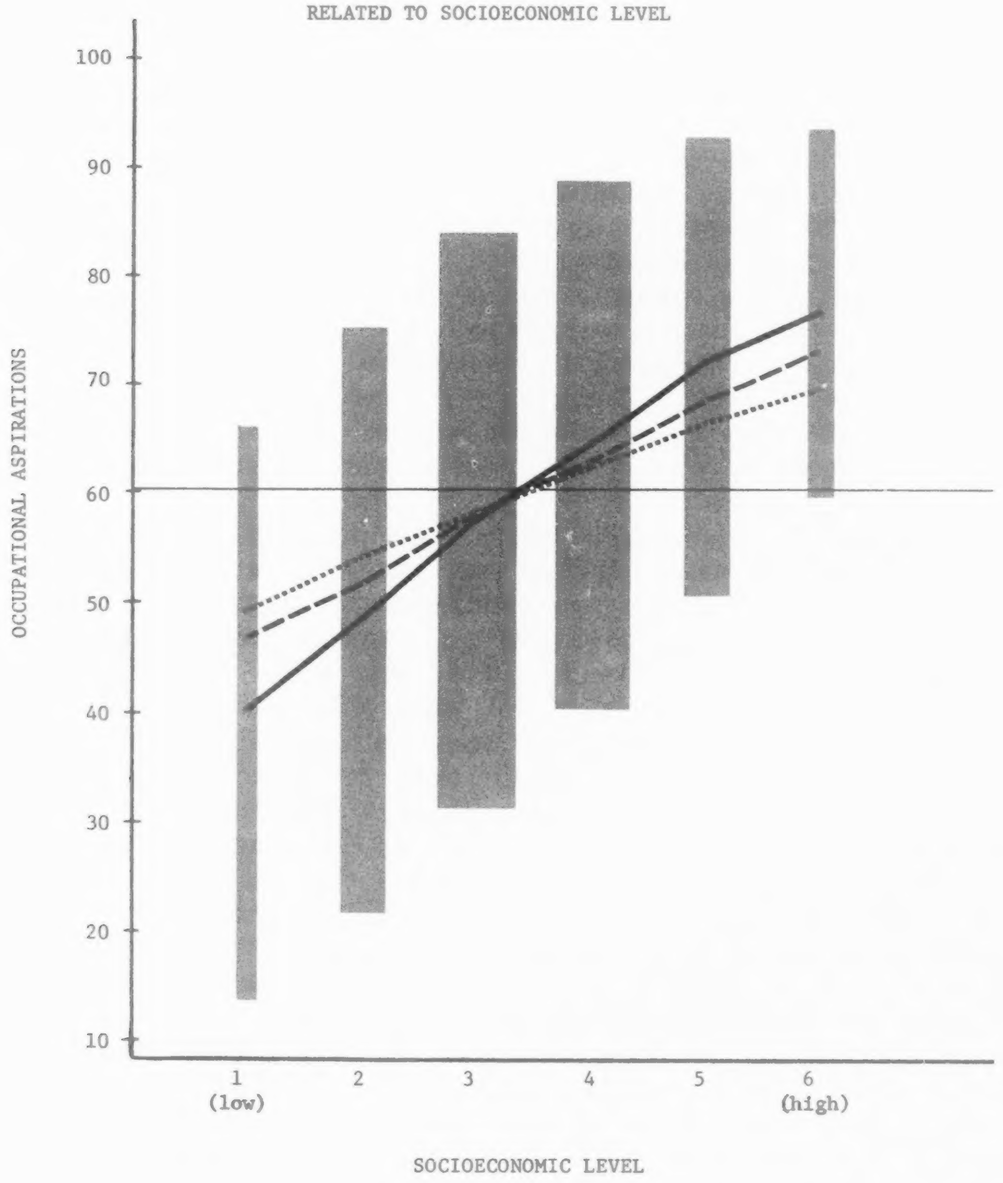
The relationship between SEL and college plans is also quite strong. At the lowest SEL category only 31 percent plan to attend college; this percentage steadily increases, with the highest SEL category showing 86 percent planning for college. (The Multiple Classification Analysis suggests that if other background factors and intelligence were equal, the above percentages would be 41 and 77—still a substantial difference related to SEL.)

Family Size. The relationship between occupational aspirations and number of siblings is presented in Figure 10-4. The unadjusted relationship is fairly strong (Eta = .27), but when other factors are held constant the effect is sharply reduced (Betas = .14 and .10). The proportion planning to go to college ranges from 67 percent for boys with one sibling, to 41 percent for boys with seven or more siblings.

Broken Home. Occupational aspiration shows relatively little relationship with the broken home measure (Eta = .07). College plans also show only a small relationship (Eta = .09), but the pattern is perhaps worth noting. Of the boys from intact homes, 59 percent plan to go to college; the percentage drops to 46 for those from homes broken by divorce or separation, but it increases to 64 percent for those boys who have lost a parent (or both) due to death. The 5 percent difference between boys from intact families and boys from homes broken by death is too small to be statistically trustworthy; the much larger difference—18 percent—between college plans for boys from families broken by death versus those broken by divorce or separation is much more trust-

FIGURE 10-3

OCCUPATIONAL ASPIRATIONS
RELATED TO SOCIOECONOMIC LEVEL



━━ connects unadjusted subgroup means (Eta = .37).
╌╌ connects means adjusted for family background factors (Beta = .26).
┈┈ connects means adjusted for family background plus intelligence (Beta = .20).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

worthy, and serves again to emphasize that the two types of broken home are very different in their effects.

Family Relations. The curvilinear relationship between family relations and occupational plans is displayed in Figure 10-5 (Eta = .16). Except for the lowest category, there is a modest tendency for occupational aspirations to be somewhat higher as we move from the poorest to the best family relations. A similar picture appears for college plans: 50 percent of the category reporting the poorest family relations plan to go to college; that percentage drops to 45 for the next poorest level of family relations, then the percentage increases fairly steadily, with 71 percent of those in the top category planning to go to college. The generally positive association between family relations and aspirations is not particularly surprising, and certainly not very strong. However, the curvilinearity at the bottom extreme of the family relations scale is puzzling and adds to our uncertainty about the meaning of that scale.

Religious Preference. Figure 10-6 displays the relationship between occupational aspiration and religious preference (Eta = .18). The highest aspirations belong to the Jewish respondents. Catholics are slightly above average. Among Protestant denominations, the pattern of occupational aspirations neatly mirrors differences in socioeconomic level; when other background factors are controlled through Multiple Classification Analysis, these differences among Protestant denominations are virtually eliminated.

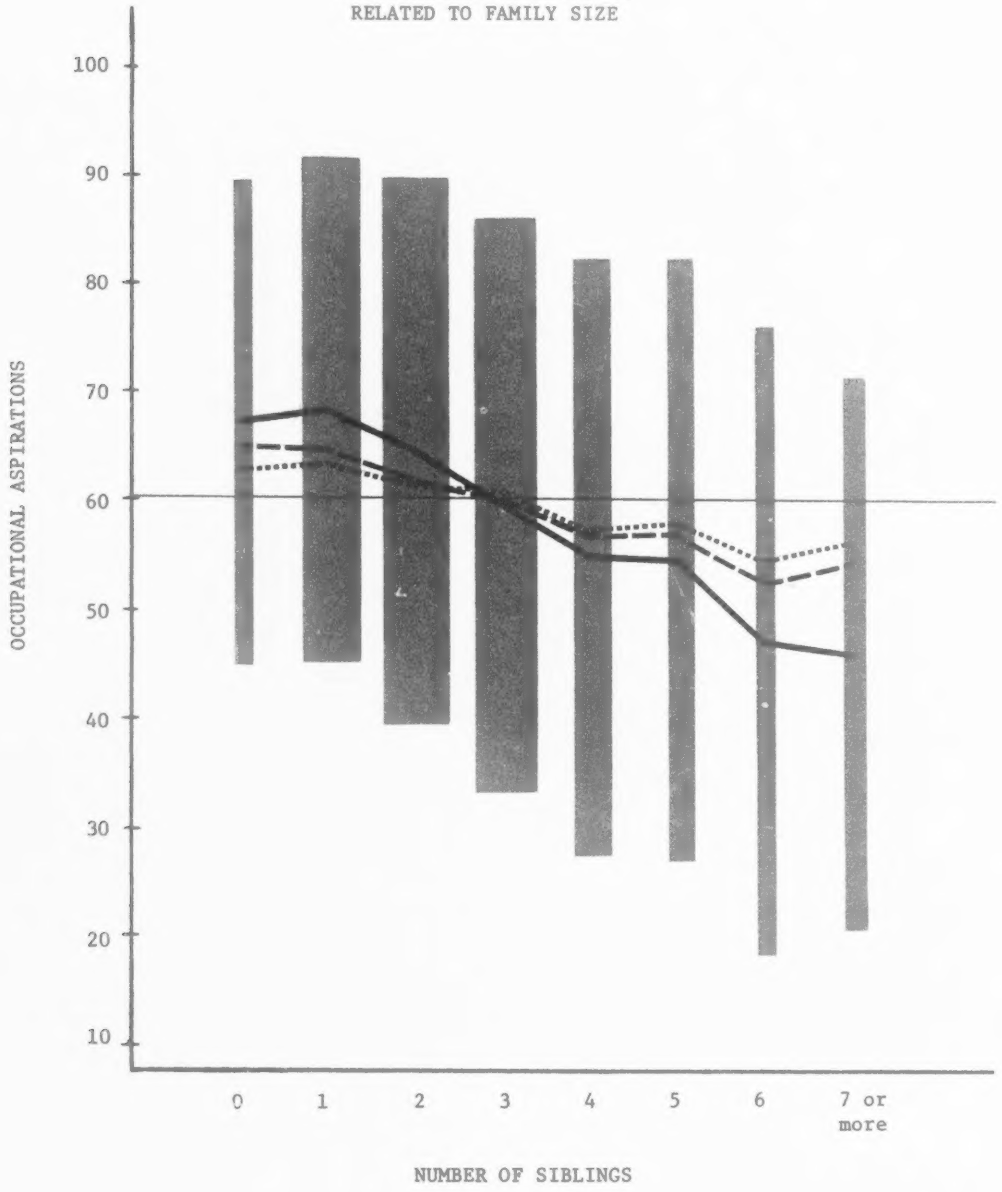
A similar pattern of findings appears when college plans are related to religious preference (Eta = .15). Ninety-one percent of the Jewish respondents plan to attend college, compared with 62 percent of Catholics, and a range among Protestants from 54 percent of Baptists to 70 percent of Epsicopalians. (As Table 10-1 indicates, these differences are substantially reduced when other factors are controlled through MCA—Beta = .08.)

Community Size. Occupational aspirations differ depending upon where a boy was raised (Eta = .29). As Figure 10-7 indicates, those raised on farms show much lower occupational aspirations than any other group, even after other background factors and intelligence are controlled. College plans also vary according to where a boy was raised (Eta = .18). Among those raised on farms, only 38 percent intend to go to college. For those raised in the country but not on farms, the figure is 50 percent. For the rest of the respondents, an average of slightly more than 60 percent plan to go to college.

Race. Racial differences in occupational aspiration, as Figure 10-8 indicates, are due almost entirely to the group of blacks

FIGURE 10-4

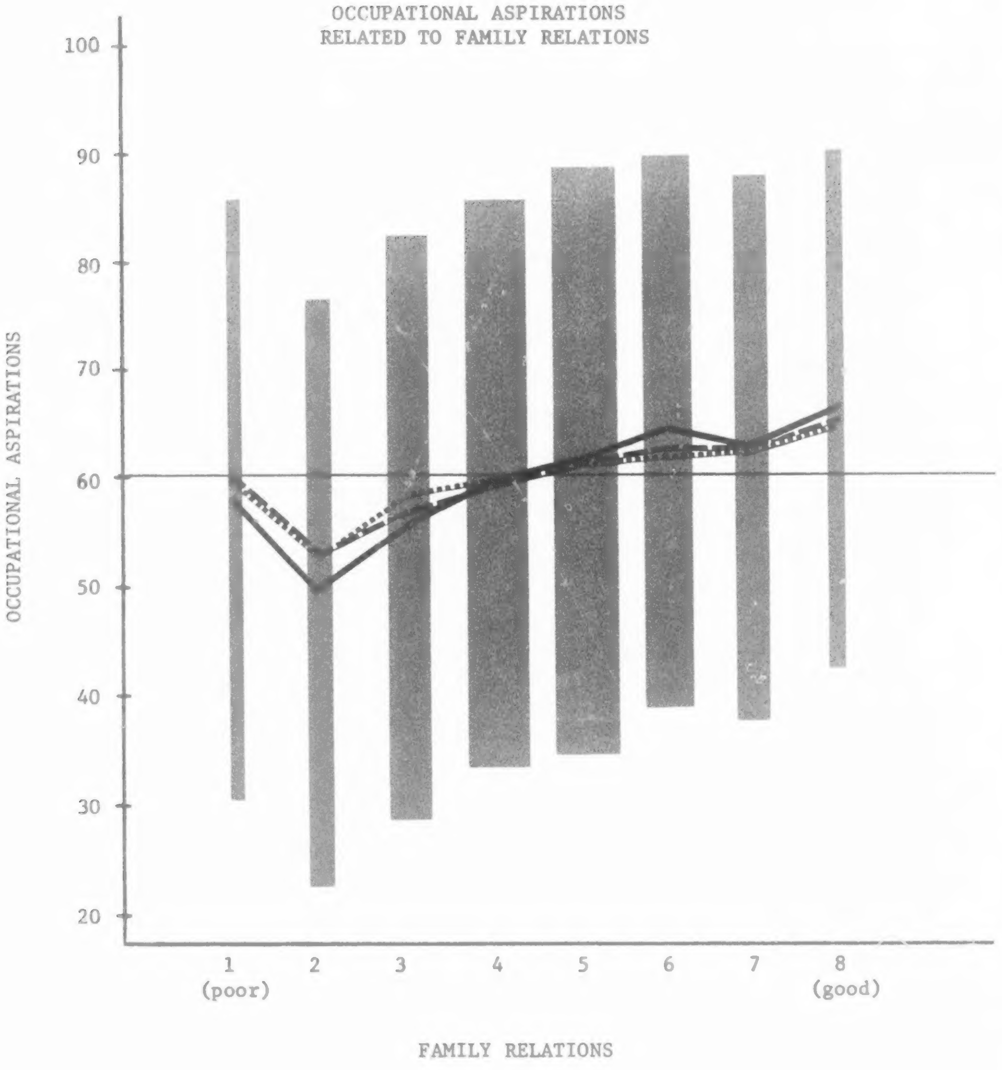
OCCUPATIONAL ASPIRATIONS
RELATED TO FAMILY SIZE



━━ connects unadjusted subgroup means (Eta = .27).
– – – connects means adjusted for family background factors (Beta = .14).
······ connects means adjusted for family background plus intelligence (Beta = .10).
Shaded bars have width proportionate so subgroup size, height proportionate to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 10-5

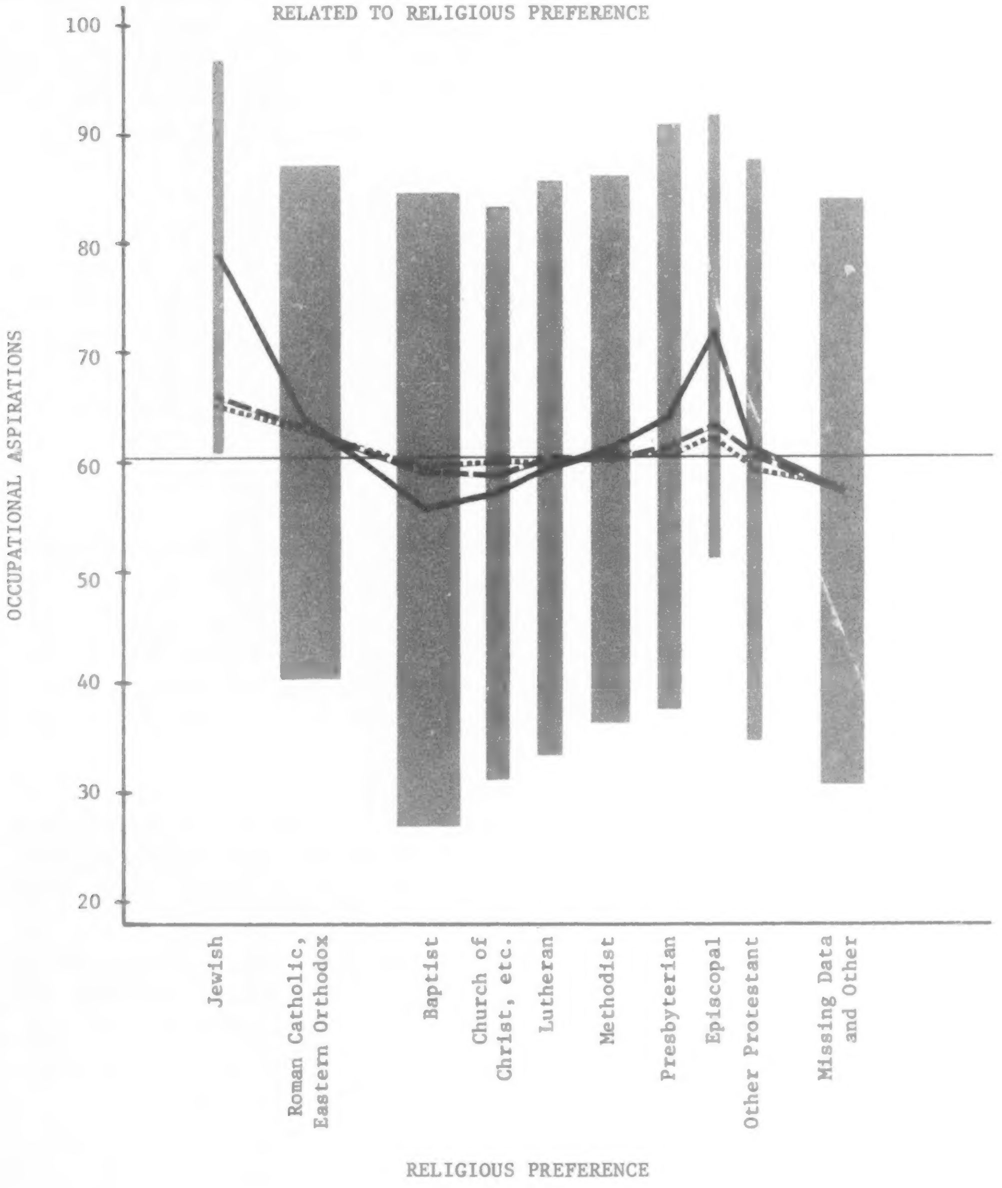
OCCUPATIONAL ASPIRATIONS
RELATED TO FAMILY RELATIONS



—— connects unadjusted subgroup means (Eta = .16).
- - - connects means adjusted for family background factors (Beta = .11).
······ connects means adjusted for family background plus intelligence (Beta = .10).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 10-6

OCCUPATIONAL ASPIRATIONS
RELATED TO RELIGIOUS PREFERENCE



▬▬ connects unadjusted subgroup means (Eta = .18).
•— — connects means adjusted for family background factors (Beta = .08).
•••••• connects means adjusted for family background plus intelligence (Beta = .07).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

in southern segregated schools. Without adjustments for other factors, respondents in this category have below average occupational aspirations. When family background factors are controlled (dashed line) there is very little difference among racial subgroups (Beta = .04). But when we control both family background and intelligence (dotted line), we find that southern segregated blacks show above average aspirations.

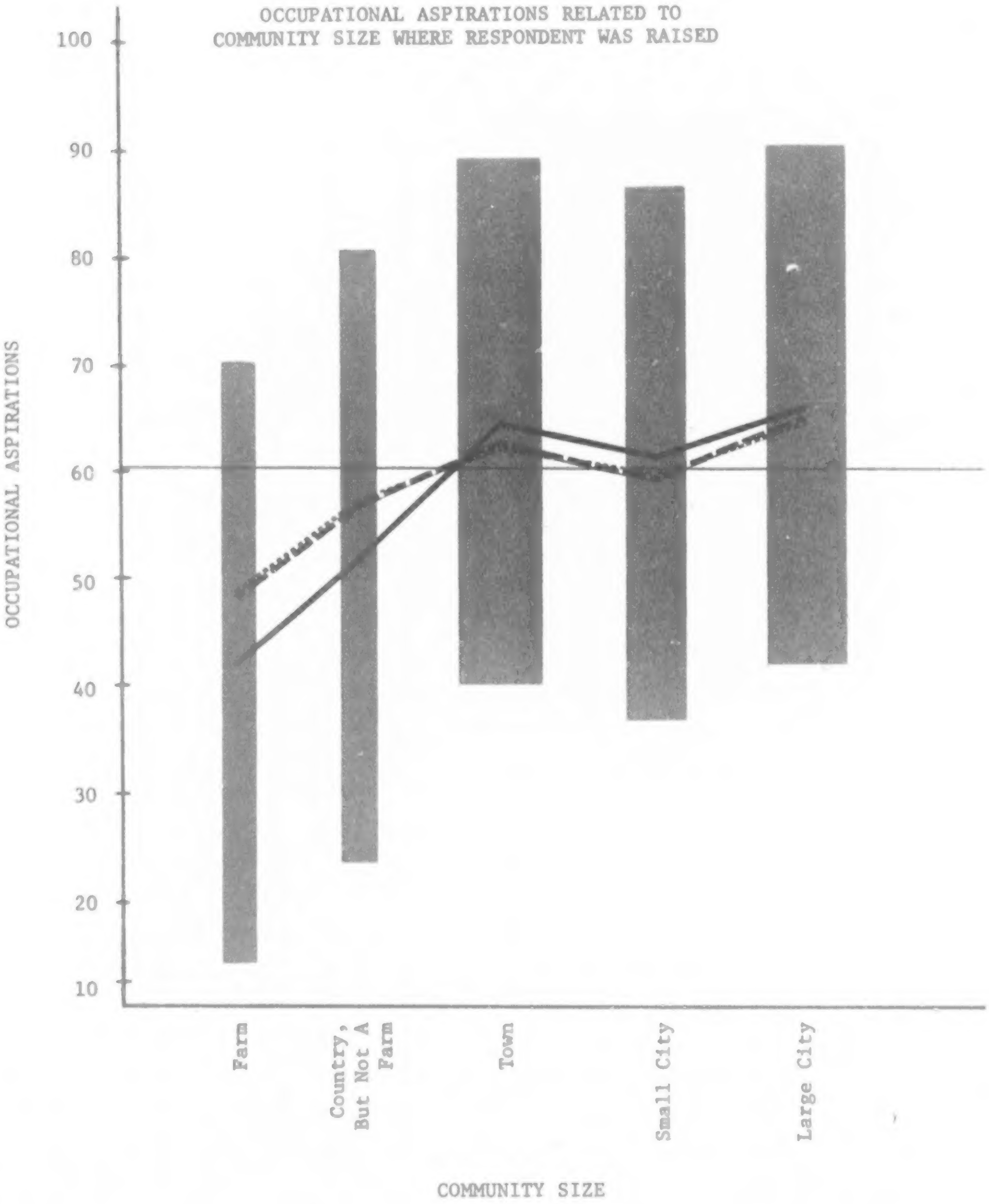
A similar pattern of relationships appears when we look at college plans for racial subgroups. Only 47 percent of the southern segregated blacks plan to enter college, in contrast to 59 percent of all whites. But when we control family background factors, the direction of difference reverses; according to the Multiple Classification Analysis, if other family background factors were equal, 10 percent *fewer* whites than southern segregated blacks would plan to enter college. And controlling for Quick Test scores in addition to family background increases this difference to about 22 percent.

Blacks in integrated schools show college aspirations slightly higher than whites, without any adjustments for other factors. Of these black students, 66 percent plan to go to college, in contrast to the 59 percent of whites. That difference of 7 percent is increases to 12 percent when family background differences are controlled, and to 15 percent when Quick Test scores are also controlled.

We can conclude from these findings that the young black high school students in our sample have set their sights fairly high in terms of both occupational aspirations and college plans. When we control for all other background factors, we find that blacks show consistently higher aspirations than whites. The differences are not very large, but they fit in quite nicely with a pattern appearing also in other chapters: the black students in our sample do not present a picture of low self-esteem, low ambition, or low aspiration. Relative to background factors, in fact, they tend to show higher aspirations than whites.

FIGURE 10-7

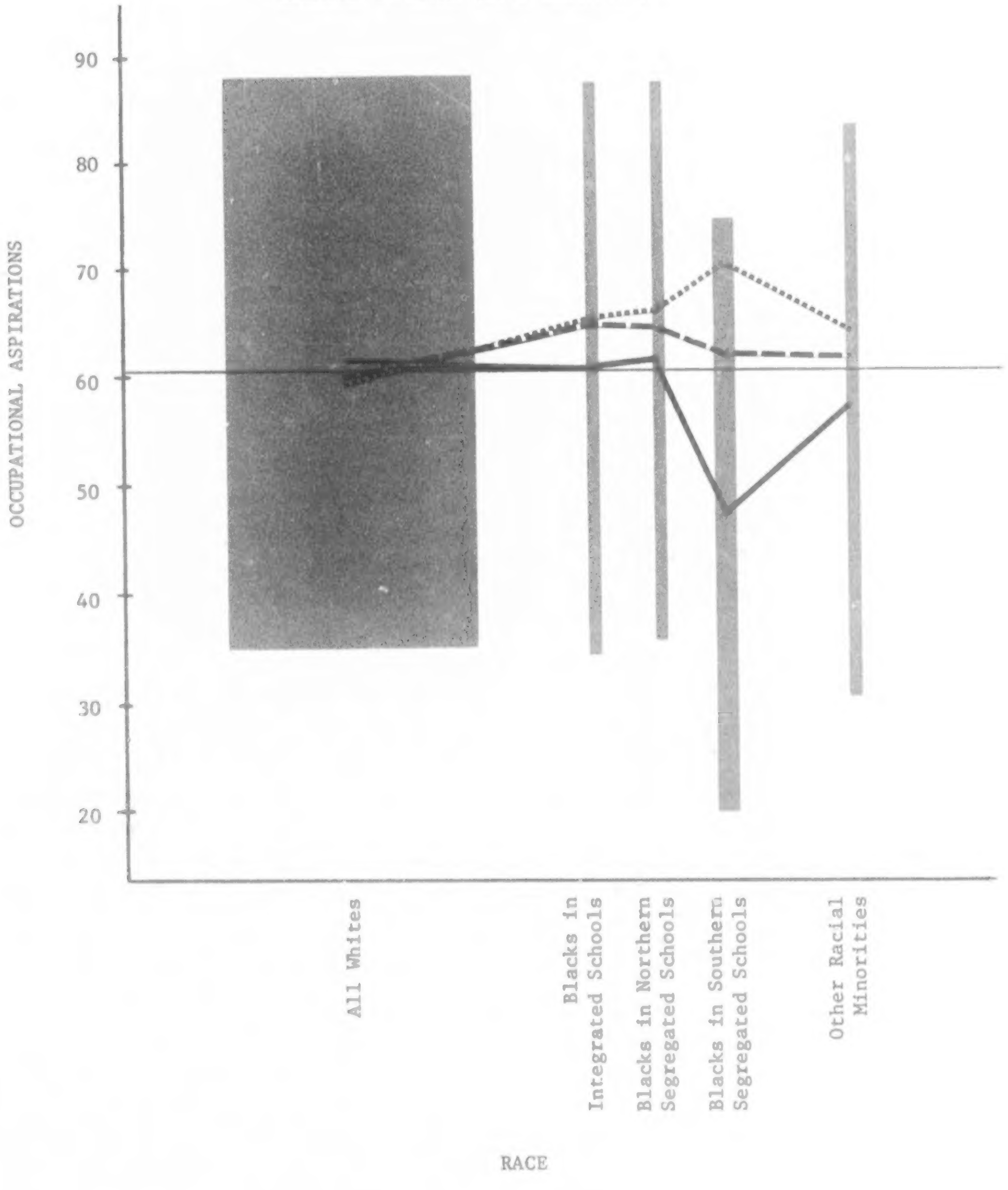
OCCUPATIONAL ASPIRATIONS RELATED TO
COMMUNITY SIZE WHERE RESPONDENT WAS RAISED



▬▬ connects unadjusted subgroup means (Eta = .29).
– – – connects means adjusted for family background factors (Beta = .19).
······ connects means adjusted for family background plus intelligence (Beta = .18).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

FIGURE 10-8

OCCUPATIONAL ASPIRATIONS
RELATED TO RACE (FIVE-CATEGORY)



━━ connects unadjusted subgroup means (Eta = .13).
╍╍ connects means adjusted for family background factors (Beta = .04).
┈┈ connects means adjusted for family background plus intelligence (Beta = .12).
Shaded bars have width proportionate to subgroup size, height proportionate
to one standard deviation above and below unadjusted subgroup mean.
See Appendix E for further information and for data underlying figures.

Summary

Family background plays a strong double role in determining future plans and aspirations. First, it is an important factor in shaping ability (intelligence) and we include here the effects of both heredity and environment. Second, above and beyond ability, family background makes a very large difference in the aspirations of young men in high school. For a variety of reasons—including better economic opportunities for future education, greater first-hand exposure to high status work roles, and family teachings that urge both the desirability and attainability of occupational success—the boy from an "advantaged" home is doubly advantaged.

The findings for occupational aspiration and college plans are highly similar. In each case, intelligence is an important predictor, but much of its effect can be interpreted as an intervening variable through which family background factors have some of their effects on the criteria.

Not surprisingly, the most important family background variable influencing aspirations is socioeconomic level. Boys from socioeconomically advantaged families are much more likely to aspire to college and a prestigious occupation. Other dimensions are also important, including family size, family relations, and religious preference. In addition, a boy's aspirations are influenced by whether he was raised in a rural setting; boys raised on farms are substantially lower than average in status of aspired occupation and plans for entering college.

Racial differences in aspirations are not especially large, but they show the sort of unmasking effect noted in some other chapters. Aspirations for southern segregated blacks tend to be a bit below average until we take account of differences in family background and Quick Test scores; then, adjusting for these differences using Multiple Classification Analysis, we find that the aspirations for this subgroup are *relatively* high.

The area of future plans, of course, is one that is particularly interesting in a longitudinal study. Even as early as one year after high school it will be possible to learn much about the success of our respondents in achieving their goals for college or occupational entry. The impact of family background on such concrete achievements will be an important topic for future analysis in the Youth in Transition study.

Chapter 11

Summary, Conclusions, and Future Research

The reader who turns directly to this chapter will find an overview of our results and conclusions, with rather little of the supporting evidence. This may be quite adequate for some, but we hope others will be stimulated to examine the findings in greater detail.

For those who reach this chapter after reading most or all of the preceding ones, the review provided here will integrate the findings presented earlier and treat them in a new perspective.

The chapter begins with a summary of our findings, examining each of the family background dimensions studied and noting their relationships to each other and to major criterion dimensions. Next we consider some longitudinal data which became available late in the writing of this monograph—data which indicate a high degree of stability for the criterion dimensions and the family background effects we have been studying. Finally we evaluate the impact of family background, and relate the present findings to future research in the Youth in Transition project.

Background Factors and Their Effects

In Chapter 2 we described and defined operationally each of the background dimensions examined in this study. In Chapter 3 we noted how these dimensions are interrelated. In Chapter 4 we considered the way each background dimension relates to intelligence, and we explored the use of multivariate analysis techniques to predict intelligence from a number of background dimensions in combination. In Chapters 5 through 10 we continued the multivariate approach, focusing on the criteria one at a time, noting the extent to which each is predictable from family background dimensions plus intelligence. This arrangement of the data according to criterion dimensions proved very useful for our major presentation of findings. But in this review chapter it will be helpful to organize our findings by summarizing the effect of each background factor (predictor) in turn on the whole range of criteria.

Socioeconomic Level. Socioeconomic level (SEL) is perhaps the most fundamentally important of the family background measures we have examined. It is related to most other background measures; indeed, what appear to be "effects" of other background dimensions can often be attributed equally well (and with greater parsimony) to SEL.

The summary measure of SEL used in this study consists of six equally weighted ingredients: father's occupational status, father's educational level, mother's educational level, number of rooms per person in the home, number of books in the home, and a checklist of other possessions in the home. These highly intercorrelated ingredients all have to do with the quality of home environment available to children, but they also are likely indicators of genetic endowment. This serves as a reminder of the point made in the first chapter: a child's inheritance has both biological and social bases—family background has its impact through both nature and nurture.

Socioeconomic level shows consistently strong relationships with measures of ability and related dimensions. A good example is provided in Figure 4-1, which displays the clear linear correlation (r = .45) between SEL and the Quick Test of intelligence. Similar correlations appear between SEL and the GATB-J measure of vocabulary skill (r = .45) and the Gates measure of reading comprehension (r = .41). Given these strong correlations with measured ability, it is not surprising to find that SEL is also related to the self-concepts young men have about their school ability; but as Figure 5-2 indicates, a moderate association between SEL and self-concept of school ability remains even after we control for intelligence and other background factors. Similar findings appear when SEL is related to school grades, college plans, and occupational aspirations; in each case a moderate correlation with SEL remains after controlling for intelligence and other background dimensions (see Figure 10-3).

The effects of socioeconomic level extend beyond areas related directly to ability. Boys from high SEL homes tend to be above average in self-esteem, needs for self-development and self-utilization, ambitious job attitudes, internal control (or feelings of personal efficacy), and political knowledge. Those from high SEL homes tend also to be lower than average in rebellious school behavior, negative school attitudes, test anxiety, and somatic symptoms.

We conclude from these findings that socioeconomic level is important in shaping ability. But in addition to its effects on ability, SEL has a positive influence on performance, aspirations, and important self-concepts. In short, the boy from a high socioeconomic level home is doubly advantaged.

Family Size. Family size, or the number of siblings a boy has, is related to socioeconomic level and to many of the criterion dimensions mentioned above. About half of our respondents report two or fewer siblings, and within this range there is no association between family size and SEL. However, when the number of siblings reaches three and increases up to seven or more, there is a steady decrease in SEL (see Figure 3-1).

Many criterion dimensions relate to family size in a curvilinear pattern somewhat similar to the one for SEL. The most important example is the Quick Test; boys with one sibling score highest, next highest are only children and those with two siblings, and as the number of siblings increases beyond two the average Quick Test score decreases (see Figure 4-2). When the effects of SEL are removed, the relationship between family size and the Quick Test is reduced but certainly not eliminated; it remains the case that only children and those with one sibling score a bit better than average, while those with six or seven or more fall below average (see Figure 4-9).

Boys from small families are higher in academic achievement, self-concepts of school ability, political knowledge, occupational aspirations, and likelihood of going to college. Part of these relationships can be attributed to differences in socioeconomic level, but a portion of the effect remains in each case after controlling for SEL.

As family size increases beyond two siblings (i.e., a total of three children, including the respondent), we find an increasing prominence of negative school attitudes and somatic symptoms. Again it appears that part, but not all, of these relationships can be attributed to differences in SEL.

We conclude from these findings that family size relates to criterion dimensions in much the same way as it relates to socioeconomic level. The effects of family size on criteria, though not as strong as those for SEL, are sufficiently large and unique to warrant our treatment of family size as a separate characteristic of family background. In general, one seems to have an advantage if he is a member of a small family.

Broken Home. We have stressed the distinction between homes broken by death and those broken by separation (usually by formal divorce). With few exceptions, homes broken by death are similar to intact families in terms of socioeconomic level or number of siblings, whereas homes broken by separation are more often large families and those at low socioeconomic levels. Families disrupted by separation also tend to show poorer than average parent-son relationships, while those broken by death do not.

Boys from homes broken by separation are a bit below average in accomplishments, aspirations, and other factors associated with SEL. It appears, however, that nearly all of these differences in homes broken by separation can be attributed to their lower SEL. Once SEL is controlled, there is little if any unique effect attributable to separated families.

Boys who have lost a parent due to death show virtually no differences from those living with both natural parents. Differences no doubt exist, but they are not large or general enough to be visible in terms of our criterion dimensions.

These findings are not the result of an exhaustive study of the effects of broken homes. On the other hand, if the loss of a parent—usually the father—due to death or separation is often a crippling experience to a young man, we should expect to see some greater indication of it in the dimensions we have been examining. As it stands, we find that once we control for differences in SEL, there is surprisingly little evidence that boys from broken homes are worse off than their classmates from intact homes.

Family Relations. A single general-purpose measure of family relations (or parent-son relations) was developed using 10 items having to do with parental punitiveness and 11 items dealing with closeness to parents and the feeling that parents are reasonable. Items were scored in such a way that a high score indicates good relations between a son and his parents. As we have stressed from the start, this is by far the most subjective of the family background dimensions we have studied; thus there is much room for subtle distortion and misinterpretation of response scales, all of which can occur without a respondent even recognizing it.

Associations with other background factors are not strong, but there is some tendency for parent-son relations to be better in small families and in families high in socioeconomic level. And, as we noted in the preceding section, family relations are below average in homes broken by separation.

The family relations measure shows strong correlations with a number of criterion dimensions. The better the family relations a boy reports, the higher is his self-esteem, his self-concept of school ability, his attitudes toward school, his feelings of personal efficacy, his social values, and his feelings of faith in others and trust in the government. The poorer the family relations he reports, the more likely the boy is to admit to aggressive impulses, delinquency, rebellious behavior in school, test anxiety, negative school attitudes, negative affective states, and somatic symptoms. These correlations show little if any change when we control for socioeconomic level and other background factors.

The above findings, taken at face value, would be quite exciting—especially since some of the correlations involved are fairly high. Our problem is that every one of the above criterion dimensions is, like the measure of family relations, highly subjective. Individuals vary in their ability to recall specific events (of delinquency or of conflict with parents), and one person's use of a response scale may be consistently different from another's (one person's "sometimes" may be another's "seldom"). Individuals also differ in their needs for favorable self-presentation or social approval. These variations, and other factors, may have much to do with the relationships summarized above—particularly when we consider that those who score highest on the family relations scale also score high on the Crowne-Marlowe need for social approval (see Figure 6-2). In short, we have felt very cautious about concluding that the relationships summarized above are based entirely on real differences in parent-son relationships—we cannot be very sure without further confirming data.

Confirming data of an indirect sort were mentioned in Chapter 7 when we noted Coopersmith's (1967) finding that *objective* ratings of maternal affection and interest are positively related to the self-esteem of pre-adolescents. Another type of data, presented in a later section of this chapter, indicates that there is a good deal of stability in the ratings of family relations, and in the correlations between criterion data and this dimension of family background. These data are encouraging, for they suggest that at least a portion of the family relations measure represents something fairly consistent.

Religious Preference. The overwhelming majority of respondents indicate that their personal religious preferences match those of their families. Religious preferences relate to several other background dimensions, including socioeconomic level and family size (see Figure 3-3 and 3-4). Jewish respondents have relatively few siblings and come from families that are above average in SEL. Catholics are about average in both SEL and number of siblings. Protestants cover a range, from Baptist families that are below average in SEL and above average in size, to Episcopalian families that are well above average in SEL and smaller than average in size. Religion is also related to political ideology. Jewish and Catholic families are predominantly Democrats, whereas among Protestants there is a range of political preference that corresponds roughly to SEL differences—Baptists are more often Democrats than Republicans, but among Episcopalians the Republicans far outnumber the Democrats.

Religious preference is related to scores on the Quick Test of intelligence (see Figure 4-5). The pattern corresponds closely to religious differences in SEL, and controlling for SEL reduces the effect of religion rather sharply. The differences in SEL and intelligence can account for most other effects of religion; in other words, a concise account of background effects would focus on SEL and intelligence and say rather little about effects of family religious preference. The one exception to this generalization involves the 59 Jewish respondents in our study. This subgroup, representing less than 3 percent of our total sample, has departed from the average in ways that cannot be attributed entirely to their above-average intelligence or socioeconomic level.

Jewish respondents are higher than any other religious subgroup in self-esteem, a finding that is consistent with the earlier work of Rosenberg (1965). They are also well above average in political knowledge, occupational aspirations, and college plans. One other difference worth noting is the fact that Jewish respondents show the lowest levels of trust in people, but the highest levels of trust in the government; this is a pattern of findings that also characterizes another minority group—black respondents in integrated schools.

Our findings for Jewish respondents are based on only a few cases; taken alone, they must be treated with a good deal of caution. But the results presented here are consistent with other findings, and together they indicate that the family background of Jewish children is particularly supportive of high self-esteem and high levels of achievement orientation.

Parents' Political Preference. Had we anticipated our findings more accurately, we might have decided against including family political preference as a background dimension for study. Political differences are related to some other background factors, although the relationships are invariably small. Republican families are slightly above average in socioeconomic level, have slightly fewer children, and are somewhat less likely to have been disrupted by divorce. Political preference also bears a slight relationship to religious preference, as noted above.

Scores on the Quick Test of intelligence are slightly higher for boys whose families are Republican; however, this difference completely disappears when we control SEL. Other relationships follow a similar pattern: when some relationship appears between political preference and a criterion dimension, it is eliminated in the multivariate analyses that control SEL and other background dimensions. In the area of trust in government we expected that some differences might appear, since Republicans are thought to be rather wary of the government in Washington (particularly since Democrats were in power at the time the questionnaire was administered); in fact, however, no meaningful difference was found between boys from Democratic and Republican families.

In short, there are slight socioeconomic differences between Republicans and Democrats, but no other effects appeared that could not be attributed most appropriately to differences in SEL.

Community Size. As we noted in Chapter 2, there are areas where it is difficult to draw the line between family background and other background conditions. In particular, we do not want to confuse the effects of family background with the effects of the school. Previous studies (e.g., Coleman, 1966) have shown that the effects of schools differ from region to region. Therefore, we will treat regional differences in a later monograph in which we examine school effects. Similarly, the kind of community in which the respondent was raised is not likely to be free from contamination with school differences. However, we suspect that community size does have something to do with family life, and on that basis it has been included in the present monograph.

Comparing young men raised mostly on farms, in the country, in towns, in small cities, and in large cities, we find only two subgroups that are consistently different from the average. The 7 percent of our respondents who were raised on farms come from the largest families and those lowest in socioeconomic level. The 16 percent raised in the country but not on farms are next largest in family size and next lowest in SEL. Boys raised on farms average lowest in Quick Test scores, occupational aspirations, and college plans; controlling for SEL reduces these differences, but does not eliminate them. Boys raised in the country but not on farms are also a bit below average on these dimensions, but in this case little difference remains after controlling for SEL. In brief, the data suggest that being raised on a farm may have some disadvantages, but otherwise there is little indication that community size has an effect above and beyond the differences associated with socioeconomic level.

Race as a Background Factor. Race is treated as a background factor in this monograph because large and pervasive racial differences in levels of education, occupation, income, housing, and the like exist in the United States. Racial differences appear in our data, and in spite of limitations in a sampling design that was not intended to study racial subgroups, we felt compelled to report our findings in this area.

Probably our most basic finding is the fact that the 256 black respondents in this study cannot be studied as a single subgroup. No less than three groups of blacks must be considered, based on different school (and community) environments: blacks in integrated schools, blacks in northern segregated schools, and blacks in southern segregated schools. Our reasons for reaching this conclusion are documented extensively in Chapter 4. In brief, we first found in preliminary analyses that black students in integrated schools are very different from those in segregated schools in terms of test scores and socioeconomic level; we then found that those in southern segregated schools are quite different from those in northern segregated schools. Given these differences in socioeconomic level and test scores, we decided that these three black subgroups would be examined separately throughout the monograph.

There are a number of family background factors that differ among racial subgroups. As Figure 3-7 indicates, blacks in integrated schools and those in northern segregated schools are somewhat below whites in SEL, while blacks in southern segregated schools are far below whites. Blacks in general, and especially those in southern segregated schools, have larger families than whites (Figure 3-8) and are more likely to come from homes that are broken by divorce or separation. More than half of the blacks who express a religious preference are Baptist, in contrast to 20 percent Baptists among whites.

The most dramatic differences among racial subgroups appear when we consider tests of ability. Figure 4-8 indicates clearly that the largest difference is not between blacks and whites but rather between southern segregated blacks and all other groups, black or white. The results for the Quick Test of intelligence are duplicated when we consider other tests dealing with vocabulary and reading ability. Controlling for socioeconomic level reduces this difference only moderately, as shown in Figure 4-10; there remains more than a full standard deviation difference between blacks in southern segregated schools and blacks in integrated schools, whereas the blacks in integrated schools are less than a quarter of a standard deviation lower than whites.

A number of racial differences in attitudes and aspirations have been found throughout the monograph. In this summary chapter we can only highlight some of them.

Self-concepts of school ability are slightly below average for southern segregated blacks; however, as Figure 5-5 indicates, when we control for background differences it appears that blacks in general have slightly more favorable self-concepts along this dimension than do whites. These small differences are parallel to the pattern of school grades discussed in Chapter 9; there we concluded that (a) the small differences in grades between whites and segregated blacks are eliminated or reversed when other background factors are controlled, and (b) there are no meaningful differences between the grades of whites and those of blacks who are in integrated schools.

It is frequently assumed that black Americans, as a result of centuries of slavery and discrimination, have lower self-esteem than whites. This may be true of adults, but our data lead us to question this assumption as applied to young men in high school. The data summarized in Figure 7-3 indicate that blacks in integrated schools and those in northern segregated schools score somewhat higher than whites on our measure of self-esteem; southern segregated blacks have actual scores that are equal to whites, but after controlling for background and Quick Test differences their adjusted scores are higher. Is this measure of self-esteem accurate in this area? Does it indicate that blacks really have higher self-esteem than whites? Unfortunately, we cannot provide a very definitive answer to these questions at present. But we can consider some related evidence that may help the reader to form his own conclusions.

Some evidence suggests that black respondents are more highly motivated than whites to portray themselves in a favorable light. Blacks score higher than whites on the Crowne-Marlowe measure of the need for social approval. And blacks report substantially lower impulses to aggression than do whites, as shown in Figure 7-4. On the other hand, blacks do not always portray themselves in a favorable light. They rate themselves lower than whites in some aspects of job ambition, they report lower trust in people than do whites, and they do not report better family relations than whites (although this dimension is strongly associated with the Crowne-Marlowe scale). Thus it is not possible to draw a simple clear-cut conclusion from our data that blacks are showing some sort of consistent distortion.

Our own view is that the fairly high self-esteem scores for black respondents represent a real feeling of self-worth. Whether *behavioral* measures of self-esteem would present a different picture is an interesting matter for speculation. We do not have direct behavioral measures, but perhaps we can draw some inferences from occupational and educational aspirations, since these tend to be a bit more concrete than the rather general items in our self-esteem scale.

The college and occupational aspirations of southern segregated blacks are somewhat lower than those of whites, as indicated in Figure 10-8. Integrated blacks and those in northern segregated schools do not show any appreciable differences from whites in their aspirations. Controlling for family background changes this picture; if anything, blacks in all three subgroups then tend to show higher aspirations than do whites. Controlling for Quick Test scores in addition to family background heightens this effect; the data indicate that, relative to background and test scores, southern segregated blacks have the highest aspirations of any racial subgroup.

The racial differences in occupational and educational aspirations are not especially large, but they do fit in rather nicely with other findings summarized in this section: the black students in this study do not present a picture of low self-esteem and under-aspiration. If anything, their aspirations are relatively higher than those of whites.

We cannot leave this summary discussion of race as a background factor without stressing two points made in earlier chapters. The first point is methodological, the second is substantive.

The sample for this study was not designed primarily to study racial differences. Indeed, the fact that our sample is clustered in a limited number of schools means that most of our black respondents are located in a handful of segregated schools (9 out of the total of 87). We consider our findings based on this sample to be limited, but nevertheless useful. In particular, we hope they will stimulate more thorough studies in this area, using samples designed for that task.

By far the largest substantive finding concerning race as a background factor is the difference in test performance between southern segregated blacks and all other blacks and whites. Our interpretations of this finding, first stated in Chapter 4, bear repitition here:

> We do not suppose that our data represent an adequate basis for reaching firm conclusions about the effects of school integration and segregation. We have, it is true, found that southern segregated blacks are much lower in Quick Test scores than integrated blacks in all regions. But to say that the low scores of the former group are the fault of their schools exclusively would ignore some other very important findings. For example, the southern segregated black respondents come from families that are far lower in SEL than any other minority grouping we have examined. Our interpretation would be that the black respondents in southern segregated schools are the products—indeed the victims—of a social system of segregation and discrimination far more pervasive than schools alone. It is quite beyond the scope of this study to determine what portion of the low scores of this group can be assigned to the effects of schools, the

wider social milieu, the effects of pre-natal and post-natal malnutrition, and other factors shown by previous research to be important. Nor can we say with complete certainty that the racial differences we have observed are solely the products of environment—our data are certainly not precise enough to rule out all possibility of hereditary differences. But the most parsimonious explanation of these data, in our view, is in terms of the massive environmental differences that exist among the racial subgroups we have been examining.

Our conclusions about racial differences are limited, as we said they would be. And we have specifically avoided any firm conclusions about the causes of these differences. In spite of these uncertainties, and in spite of the sampling limitations acknowledged earlier, we feel that the data on test scores and race add evidence to the view that so-called "racial differences" are primarily—if not exclusively—differences in cultural and educational opportunities.

Intelligence: Background Facts and Intervening Variable

We have summarized above the ways in which socioeconomic level and other family background factors are related to intelligence (as measured by the Quick Test and other tests). Our interpretation of such relationships is that family background factors are among the causes of intelligence. But while intelligence can be viewed in part as a result of background factors, it can also be studied as a cause of other factors. For example, one of our conclusions in Chapter 4 is that family background influences intelligence which in turn influences job information. This dual role as both effect and cause has led us to conceive of intelligence as an intervening variable—a variable in the middle of a causal sequence. A model treating intelligence as an intervening variable was introduced in Figure 4-12; there we distinguished between the unique effects of intelligence (Arrow A in Figure 4-12), the effects of family background which we interpret as operating through intelligence (Arrow B), and the effects of family background which are independent of intelligence (Arrow C).

One of the most obvious correlates of intelligence is self-concept of school ability—the higher a boy's measured intelligence (Quick Test score) the higher he rates himself on school ability (including reading skill and intelligence). Also rather obvious is the finding that measured intelligence is strongly correlated with grades in school. But not all background effects on school grades operate through intelligence as an intervening variable; about one-third of our prediction of grades may be described as unique effects of intelligence (Arrow A), another third as family background effects operating through intelligence (Arrow B), and the remaining third as unique effects of family background—those that do not "overlap" with the effects of intelligence (Arrow C).

Intelligence relates to school attitudes as well as school performance. Brighter boys have fewer negative school attitudes—but their positive school attitudes (based on a separate measure) are scarcely stronger than those of less bright boys. Brighter boys also are slightly lower in test anxiety and rebellious behavior in school, but these effects tend to be rather small.

Self-esteem shows a modest positive correlation with intelligence. Similar correlations also occur between intelligence and measures of internal control (or personal efficacy), and needs for self-development and self-utilization. These effects seem quite consistent with reality, particularly the reality experienced by a high school student. The bright student does better in school, finds it more satisfying to develop and utilize school-related abilities, and is better able to control events—rather than being controlled by events.

Especially important is the relationship between intelligence and future plans. The data presented in Chapter 10, and summarized in Figure 10-2, led us to the following conclusion:

> Intelligence plays an important role in the determination of college and occupational plans. Some of its effect is unique and cannot be traced back to family background. But an equal, if not larger, part of the role of intelligence is as an intervening variable—the path through which some aspects of family background (both hereditary and environmental) get translated into an impact on future plans. In brief, family background affects ability which in turn affects future plans.
>
> Much of the impact of family background does not, however, seem to operate through intelligence. This is the second conclusion to be drawn from Figure 10-2. After giving intelligence its full due, we find that background has a very large role remaining. Put more simply, this means that if two boys are equal in intelligence, their plans for the future may still be quite different, and family background is among the major causes of such differences.

Early Findings from Subsequent Data Collections

As we noted in the first chapter, Youth in Transition is a longitudinal study involving repeated data collections from a panel of young men. This monograph has been devoted entirely to analyses of information obtained from the "Time 1" data collection, which occurred in the fall of 1966, when the respondents were beginning tenth grade. The "Time 2" and "Time 3" data collections, which included a re-measurement of most of our criterion dimensions, were carried out in the spring of 1968 (when most respondents were ending eleventh grade) and in the spring of 1969 (when most were about to graduate from high school). Some analyses which combine data from Times 1, 2, and 3 have recently become available. These analyses are preliminary and quite limited in their scope; nevertheless, the longitudinal perspective they provide is a useful addition to this monograph.[1]

Special Subsample for Longitudinal Analyses. The subsample used in our preliminary longitudinal analyses is a limited one for two reasons. First is the problem of panel mortality; not all respondents who begin a longitudinal study continue their participation to the end. This problem has turned out to be less severe than we originally feared; during the two-and-one-half year period between the first and third data collections we have retained about 81 percent of our original panel of respondents.[2]

The second restriction in the longitudinal subsample is a self-imposed one. For several reasons not directly related to this monograph, we have decided to restrict our first explorations of longitudinal data to those boys who have remained in the same school for all three data collections; thus, we are excluding (temporarily) another 19 percent of our respondents who have dropped out of school or transferred to another school.

The two restrictions on our longitudinal subsample leave us with just under 63 percent of the original sample. A comparison of this subsample and the original sample is presented in Table 11-1. Since the subsample systematically excludes all boys who dropped out of school since Time 1, we would expect some differences between them and the total sample in the areas of socioeconomic level, test scores, occupational and education aspirations. Such differences do appear in Table 11-1, but they are not particularly large (perhaps partly because only some of those excluded from the subsample were dropouts).[3]

There is another kind of difference we might expect, but it cannot be examined in Table 11-1. Given that our longitudinal subsample is limited to boys who have remained in the same school from grades ten through twelve, we may be dealing with a group that somewhat underrepresents the changes that occurred in the total sample. We suspect that dropping out changes a boy in

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[1] It was not an easy decision to include these preliminary longitudinal findings "ahead of schedule." Some of the reasons for doing so are noted in the Preface.

[2] Further information concerning the longitudinal design and response rates appears in the Preface.

[3] One of the monographs planned to follow shortly after this one will deal extensively with dropouts, noting how they differ at Time 3 from those who stayed in school, and noting the ways in which they were already different at Time 1.

TABLE 11-1

COMPARISON OF FULL SAMPLE AND SPECIAL SAMPLE FOR LONGITUDINAL ANALYSIS

	FULL SAMPLE		SPECIAL LONGITUDINAL SAMPLE	
	Unweighted N=2213 Weighted N=2514		Unweighted N=1374 Weighted N=1584	
	MEAN	S.D.	MEAN	S.D.
Socioeconomic Level	4.99	.80	5.09	.78
Quick Test of Intelligence	108.5	12.4	110.4	11.4
GATB-J Vocabulary	18.9	6.6	20.1	6.3
Gates Reading Test	36.0	6.2	37.2	4.9
Job Information Test	16.7	3.4	17.1	3.2
Self-Concept of School Ability	4.13	.73	4.21	.72
Positive School Attitudes	3.25	.53	3.30	.49
Negative School Attitudes	1.91	.61	1.80	.55
Need for Self-Development	3.62	.54	3.66	.51
Need for Self-Utilization	3.85	.54	3.89	.51
Test Anxiety	1.49	.24	1.49	.24
Need for Social Approval	1.48	.17	1.48	.17
Self-Esteem	3.75	.52	3.77	.51
Negative Affective States	2.62	.55	2.59	.54
Happiness	3.77	.61	3.80	.60
Somatic Symptoms	2.14	.60	2.08	.54
Impulse to Aggression	2.54	.82	2.47	.78
Social Values	4.70	.56	4.75	.54
Ambitious Job Attitudes	5.06	.70	5.15	.65
Internal Control	1.66	.19	1.67	.19
Trust in People	1.52	1.10	1.57	1.11
Trust in the Government	3.67	.66	3.70	.65
Political Knowledge	2.61	1.46	2.83	1.44
Delinquent Behaviors	1.63	.53	1.54	.42
Rebellious Behavior in School	2.05	.55	1.98	.50
Academic Achievement (Grades)	40.0	7.2	41.2	6.8
Occupational Aspirations	60.3	26.5	63.8	25.5
College Plans	.58	.49	.64	.48

some ways, and it may be that transferring from one school to another leads to some important changes also. Since boys who have experienced such changes in environment are not included in these preliminary analyses, the dimensions show a relatively high degree of stability across time—a level of stability that occurs only when the high school environment remains fairly constant. This sort of stability is actually quite helpful to us as we begin longitudinal analyses, but we must keep in mind that it may be spuriously high compared to that which may occur for the total sample.

In short, the preliminary longitudinal analyses to be reported here are based on a special subsample that is systematically biased in some ways. The 63 percent in the subsample average a bit higher than the total sample in socioeconomic level, ability, and aspirations; however, these differences are rather small—usually 10 to 20 percent of one standard deviation. The differences in stability between the subsample and the total sample are not so readily assessed. Accordingly, we must keep in mind that our special subsample for longitudinal analyses is representative only of boys who remain in the same high school for their last three years.

Stability of Criteria During the High School Years. How stable are the criterion dimensions we have been considering in this monograph? One way of answering that question is to consider whether there have been any average shifts upward or downward from Time 1 to Time 2 to Time 3. Quite another way of looking at the question of stability is to consider whether individuals hold the same relative position at Times 2 and 3 as they did at Time 1; this would be reflected in high correlations between Time 1 scores and those at Times 2 and 3. Data relevant to both these perspectives on stability are presented in Table 11-2.

A comparison of mean scores at Times 1, 2, and 3 indicates that there are relatively few criterion dimensions that show large average shifts from tenth to twelfth grade. The largest such change involves the job information test—a measure that was designed to discriminate between tenth and twelfth graders.[4] Ambitious job attitudes also show an increase over time, although the change is much smaller. On the other hand, there is a slight

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[4] It is possible, of course, that some or even all of the change in the job information test is artifactual, since a single form of the test was used at all three times. However, the fact that the test was able to discriminate between tenth and twelfth graders in a pilot study leads us to believe that much of the change shown in Table 11-2 represents real growth in job information.

TABLE 11-2

STABILITY OF CRITERIA
ACROSS TIME

	MEAN SCORES			CROSS-TIME CORRELATIONS		
	Time 1	Time 2	Time 3	T1-T3 (30 mos.)	T1-T2 (18 mos.)	T2-T3 (12 mos.)
Job Information Test	17.1	18.1	19.0	.53	.59	.61
Self-Concept of School Ability	4.21	4.25			.72	
Positive School Attitudes	3.30	3.21	3.06	.42	.49	.57
Negative School Attitudes	1.80	1.79	1.90	.41	.47	.54
Need for Self-Development	3.66	3.64	3.65	.50	.56	.64
Need for Self-Utilization	3.89	3.82	3.85	.42	.48	.54
Test Anxiety	1.49	1.44			.58	
Self-Esteem	3.77	3.84	3.88	.49	.54	.66
Negative Affective States	2.59	2.55	2.53	.52	.56	.69
Happiness	3.80	3.82	3.80	.47	.54	.63
Somatic Symptoms	2.08	2.07	2.09	.42	.52	.62
Impulse to Aggression	2.47	2.43	2.45	.40	.46	.61
Social Values	4.75	4.78	4.76	.41	.51	.54
Ambitious Job Attitudes	5.15	5.30	5.31	.36	.46	.52
Internal Control	1.67	1.71	1.71	.32	.42	.51
Trust in People	1.57	1.61	1.57	.35	.37	.47
Trust in the Government	3.70	3.54	3.51	.33	.46	.48
Political Knowledge	2.83	2.49	2.28	.48	.60	.56
Delinquent Behaviors	1.54	1.51	1.57	.48	.53	.63
Rebellious Behavior in School	1.98	2.10			.53	
Academic Achievement (Grades)	41.2	40.7	41.3	.58	.67	.66
Occupational Aspirations	63.8	61.1	59.8	.53	.62	.66
College Plans	0.64	0.67	0.57	.40	.44	.49

drop in status of occupational aspiration. Other analyses have indicated that the lowering of aspiration occurs primarily among those boys not expecting to enter college, thus the change may reflect an increasing realism as the time approaches for entering the work force.

Several changes occurred that were entirely unexpected. Positive school attitudes *declined* by one half standard deviation between Times 1 and 3. Most of the change appears to have occurred during the senior year of high school. The decrease in positive school attitudes was paralleled by increases in negative school attitudes and rebellious behaviors in school. As we noted in Chapter 6, the school attitudes at Time 1 were very positive indeed. The subsequent change may thus represent a trend toward a greater degree of realism.

A few other dimensions showed mean shifts. Self-esteem increased by a little more than 20 percent of a standard deviation in a gradual shift from Time 1 to Time 3. Trust in government decreased by over 30 percent of a standard deviation during the same period. Political knowledge scores dropped appreciably; however, this was due entirely to a new (and less well-known) Secretary of Defense at Time 2, and new Secretaries of State and Defense at Time 3. (Respondents improved over time in their ability to name the two U. S. Senators from their home states.)

Turning to the cross-time correlations presented in Table 11-2, we find a considerable degree of stability. The highest correlations consistently appear between Times 2 and 3, a period spanning only 12 months; next highest correlations appear between Times 1 and 2, a period of 18 months; and, of course, the correlations are lowest for the full 30 month span between Times 1 and 3.

The greatest level of stability appeared in the interview measure of self-concept of school ability; the product-moment correlation between Time 1 and Time 2 scores is .72. Also highly stable are school grades (as reported by the respondents), with a correlation of .58 between average grades in ninth grade (reported at Time 1) and average grades in twelfth grade (reported at Time 3). Not surprisingly, there are consistently strong relationships between grades and the self-concept of school ability; correlations range from .51 (when both grades and self-concepts are measured at the same time) to .40 (between self-concepts at Time 1 and grades reported at Time 3).

Cross-time correlations for other criterion dimensions, while not as high as those related to school ability, are nonetheless fairly substantial. This is true even when there are relatively large overall shifts in mean scores, as in the case of job information, positive school attitudes, and political knowledge.

In sum, there appears to be a good deal of stability across time in our criterion dimensions. Some show mean shifts, but these are not unduly large. And all show at least a moderate degree of cross-time correlation. Thus we suspect that the background effects uncovered in our Time 1 data are likely to remain important through Times 2 and 3. We should add, however, that the stability noted here does not preclude meaningful study of individual changes; there is plenty of room for an individual to increase or decrease on each of the criterion scales. And of course we have presented stability data on only that subsample which is likely to be most stable during late adolescence—those who remain in the same high school from grade ten to graduation.

This monograph cannot be extended to include a really thorough exploration of the impact of family background upon criterion dimensions measured at Times 2 and 3. We can, however, make use of preliminary correlational data to give us some further indication of the extent to which our findings from the Time 1 data are likely to be stable through Times 2 and 3. The background measures that are best suited to analysis using product-moment correlations are those which tend to show linear relationships with criterion dimensions. One such dimension is socioeconomic level, another is the Quick Test of intelligence, and a third is the measure of family relations. We begin by considering SEL and intelligence.

Cross-Time Effects of Socioeconomic Level and Intelligence. We reported in Chapter 4 that SEL is strongly related to scores on the Quick Test of intelligence; and in later chapters we noted frequently that these two dimensions overlap in their effects, a relationship which we interpret as indicating that SEL (like other family background factors) operates through intelligence as an intervening variable. Given this intercorrelation and similarity in effects, it will be convenient to examine the cross-time effects of SEL and intelligence at the same time. Table 11-3 presents the necessary data.

The dominant impression gained from an examination of Table 11-3 is one of great stability of relationships. The fairly high correlations with the job information test, self-concept of school ability, political knowledge, grades, occupational aspirations, and college plans all remain highly stable across time. Some of the smaller relationships, including those with self-esteem, also show a good deal of stability. Other relationships, such as those with negative school attitudes, have a tendency to become attenuated

TABLE 11-3

INTELLIGENCE AND SOCIOECONOMIC LEVEL RELATED TO CRITERIA MEASURED AT THREE POINTS IN TIME

	CORRELATIONS[a] BETWEEN QUICK TEST OF INTELLIGENCE AND CRITERIA MEASURED AT:			CORRELATIONS[a] BETWEEN SOCIOECONOMIC LEVEL AND CRITERIA MEASURED AT:		
	TIME 1	TIME 2	TIME 3	TIME 1	TIME 2	TIME 3
Job Information Test	.51	.49	.48	.29	.33	.34
Self-Concept of School Ability	.46	.45		.32	.30	
Positive School Attitudes	.06	.05	.02	.09	.03	.00
Negative School Attitudes	-.19	-.18	-.11	-.18	-.12	-.08
Need for Self-Development	.19	.17	.16	.13	.12	.08
Need for Self-Utilization	.14	.16	.13	.13	.09	.05
Test Anxiety	-.24	-.21		-.13	-.12	
Self-Esteem	.11	.11	.11	.11	.09	.10
Negative Affective States	-.06	-.03	-.06	-.06	-.03	-.07
Happiness	-.00	-.00	-.02	-.00	.00	-.01
Somatic Symptoms	-.11	-.11	-.09	-.09	-.07	-.08
Impulse to Aggression	.07	.12	.12	.03	.07	.07
Social Values	.13	.05	-.00	.11	.01	-.07
Ambitious Job Attitudes	.21	.18	.16	.19	.10	.08
Internal Control	.19	.17	.14	.15	.09	.10
Trust in People	.06	.01	.07	.04	.00	.06
Trust in the Government	.05	.05	.04	.03	-.02	-.06
Political Knowledge	.33	.34	.30	.22	.26	.24
Delinquent Behaviors	.05	-.08	-.04	.04	-.03	.01
Rebellious Behavior in School	-.06	-.09		-.07	-.05	
Academic Achievement (Grades)	.36	.31	.28	.22	.23	.25
Occupational Aspirations	.31	.32	.33	.34	.30	.33
College Plans	.27	.24	.27	.29	.28	.33

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[a] Each entry is a product-moment correlation between the predictor (measured at Time 1) and a criterion (measured at either Time 1, Time 2, or Time 3).

over time. But on the whole, the initial impression is confirmed by more careful examination of the data: most criteria correlate with the Quick Test and SEL just about the same at Times 2 and 3 as they do at Time 1.

These stable relationships are reassuring, if not surprising. Family socioeconomic level is not likely to change much during a boy's high school years, and most psychologists consider intelligence to be fairly stable by late adolescence. Thus our data seem to indicate that the effects of SEL and intelligence upon most of our criteria are fairly well established by the time a boy reaches high school, and do not change much during the high school years.

Cross-Time Effects of Family Relations. We were fairly comfortable in assuming above that SEL and intelligence are rather stable during the high school years. But such an assumption seems much less appropriate when dealing with the interpersonal relations between a boy and his parents during this period. Most of our respondents reached driving age between Time 1 and Time 2. The modal frequency of dating increases from once a month or less at Time 1, to two or three times a month at Time 2. These realities alone would be enough to suggest family relations might change over time. Considerations such as these led us to obtain family relations data at Time 2 as well as Time 1, so that we would be able to assess the stability of this family background dimension. The two measures correlate .59, indicating that the way a boy gets along with his parents at Time 2 is fairly well predictable from the way he got along with them at Time 1. More interesting, perhaps, is the finding that there is an overall upward shift in family relations equal to about one-third of a standard deviation. It thus appears that boys get along with their parents a bit better at the end of eleventh grade than at the start of tenth grade.

Now that we have established that family relations are fairly stable from Time 1 to Time 2, we must consider whether the associations between family relations and criterion dimensions are also stable across time. The necessary data are presented in Table 11-4.

If we compare the correlations between family relations and criteria at Time 1 (first column of Table 11-4) with the parallel correlations at Time 2 (fifth column of Table 11-5), we find an extremely high degree of consistency. The pattern of association between the family relations measure and the criterion dimensions which appeared at Time 1 is replicated almost exactly at Time 2.

But given the consistency between the first and fifth columns of Table 11-4, can we conclude that family relations show the

TABLE 11-4

CROSS-TIME RELATIONSHIPS
BETWEEN FAMILY RELATIONS[a]
AND CRITERIA

	CORRELATIONS[b] BETWEEN FAMILY RELATIONS AT TIME 1 AND CRITERIA MEASURED AT:			CORRELATIONS[b] BETWEEN FAMILY RELATIONS AT TIME 2 AND CRITERIA MEASURED AT:		
	TIME 1 (same time)	TIME 2 (18 mos. later)	TIME 3 (30 mos. later)	TIME 1 (18 mos. earlier)	TIME 2 (same time)	TIME 3 (12 mos. later)
Job Information Test	.02	.04	.02	.00	.05	.03
Self-Concept of School Ability	.11	.09		.09	.09	
Positive School Attitudes	.36	.27	.22	.28	.37	.29
Negative School Attitudes	-.37	-.27	-.23	-.28	-.36	-.24
Need for Self-Development	.25	.19	.21	.20	.24	.23
Need for Self-Utilization	.17	.14	.14	.13	.15	.18
Test Anxiety	-.17	-.14		-.12	-.17	
Self-Esteem	.36	.27	.21	.28	.33	.27
Negative Affective States	-.42	-.30	-.22	-.28	-.42	-.31
Happiness	.38	.32	.23	.30	.41	.30
Somatic Symptoms	-.40	-.22	-.15	-.23	-.37	-.20
Impulse to Aggression	-.37	-.25	-.18	-.26	-.38	-.28
Social Values	.33	.25	.17	.22	.35	.23
Ambitious Job Attitudes	.27	.20	.12	.20	.32	.21
Internal Control	.25	.20	.17	.15	.25	.21
Trust in People	.18	.13	.14	.14	.21	.16
Trust in the Government	.24	.20	.12	.15	.23	.19
Political Knowledge	.03	.08	.07	.06	.08	.08
Delinquent Behaviors	-.33	-.23	-.17	-.24	-.32	-.24
Rebellious Behavior in School	-.38	-.21		-.28	-.37	
Academic Achievement (Grades)	.15	.14	.13	.09	.16	.16
Occupational Aspirations	.05	.04	.06	.01	.03	.06
College Plans	.09	.08	.13	.06	.09	.12

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[a] Nineteen-item version used at both Time 1 and Time 2.

[b] Each entry is a product-moment correlation between the predictor and a criterion.

same degree of stability we found for socioeconomic level and intelligence? A look at the other columns in Table 11-4 indicates that we cannot. The correlations with family relations grow smaller when the criterion dimensions are measured at a different point in time. The reader who chooses to examine Table 11-4 in greater detail will find few exceptions to this general conclusion: the greater the interval between the measurement of the predictor and the criterion, the smaller will be the correlation.

The total set of findings summarized in Table 11-4 can be interpreted in the following way. The pattern of association between family relations and criterion dimensions is essentially the same at the end of eleventh grade as it is at the start of tenth grade (based on a comparison of the fifth column with the first column in Table 11-4); and in that sense the family relations measure shows the same consistency of effect as we found for socioeconomic level and intelligence. However, the family relations dimension itself is not as stable over time as we assume SEL and intelligence to be; therefore, we find that family relations measured at Time 1 predict best to criteria measured at Time 1, and least well to criteria measured at Time 3.

The above interpretation is a perfectly reasonable one. It asserts that family relations really do change to some extent during late adolescence, and thus the best measure of family relations is one that corresponds in time with the criterion dimension. In our view this interpretation is valid to at least some degree. Our findings do not rule out the possibility of subjective bias, favorable self-presentation, and the like; indeed, we assume that our measure of family relations (like many of our criterion dimensions) is distorted to some degree by such phenomena. Nevertheless, we assume also that there is a fair degree of validity in our family relations measure. It seems likely that self-esteem and social values really are better developed in families with favorable parent-son relationships; and we conclude that such effects are captured at least faintly by the measures we have used.

Conclusions: *The Background Factors which Matter Most*

We began this monograph with the assertion that family background is a cluster of powerful forces which do much to shape an individual's capacities and accomplishments throughout his lifetime. Our aim was not to provide an exhaustive review of background characteristics, or chart the many subtle interactions which occur among them. Recognizing that any attempt to summarize family background is sure to be incomplete and arbitrary, we set out to focus on a few variables which promised to be *predictively useful* in our study. Now, at the end of this phase of our study, we are in a position to specify which background factors seem to matter most, in terms of their ability to predict our criterion dimensions.

Three background dimensions have proved especially important—family socioeconomic level, family relations (or parent-son relationships), and the composite measure of race/school integration/region. Other family characteristics are certainly of interest, but these three are the ones that will deserve special consideration (and perhaps statistical control) whenever we examine effects of schools and other social environments

One other dimension to be considered carefully in future analyses is intelligence. In this monograph we have treated intelligence in two quite different analytic roles: first it has been used as a criterion variable, presumed to be caused in part by family background. Then in later analyses it has been treated as a causal variable in its own right. In a number of instances it has proved useful to conceive of intelligence as an intervening variable through which some of the effects of family background are channeled.

The preliminary longitudinal analyses reported in this chapter indicate that the effects of intelligence and socioeconomic level are highly stable among boys going through the last three years of high school. We assume that a major reason for this stability is the fact that intelligence and family socioeconomic level remain largely unchanged during a boy's high school years. This high degree of stability applies equally well to the race/school integration/region variable. The family relations variable, however, is not unchanging during this period. On the average, a modest improvement in family relations appears between the start of tenth grade and the end of eleventh grade. And although the measure shows considerable consistency across time, there is also ample room for boys to shift in terms of how well they get along with their parents. Thus we conclude that the most appropriate measure of family relations for later analyses will be the one that corresponds most closely in time to the criterion measure.

Next Steps in This Research

A research monograph often ends by pointing out new frontiers for future workers in the area. We do hope that others will pursue some of our findings further, particularly those involving complex racial differences (and non-differences). But many of the next steps to be taken rest squarely in our own hands, for now we need to see how the relationships studied here fit into a larger picture of the effects of social environments on adolescent boys. We need to consider how those who drop out of high school differ from those who do not—both before and after the dropping out occurs. We've established in preliminary analyses that our criterion dimensions show some consistency over time—but now we also need to develop and refine analytic methods for dealing with change. We need to consolidate our measures of school characteristics and relate them to changes in boys during the high school years. And finally we need to examine the causes and effects of the transition out of the high school environment and into the worlds of work and higher education.

The findings reported in this volume have brought us several steps closer to our next research objectives. We have found that a handful of very general dimensions can summarize much of the (measurable) impact of family background on a wide range of outcomes. This degree of parsimony has great practical value as well as theoretical attractiveness, for it means that family background can be treated effectively using only three or four basic variables. We have also found enough strength and consistency of relationship to increase our confidence in the validity of many of our measures. In short, we have made a start in analyzing the Youth in Transition data—we look forward eagerly to the next steps.

APPENDICES

Appendix A

ESTIMATES OF SAMPLING ERROR*

As reported in Bachman, et al., (1967, pp. 21-24, 123-129), the sample for this study was selected in three stages. Stage one consisted of the Survey Research Center's national sample of counties and metropolitan areas selected from each of 88 strata. Stage two involved selecting one school from each such county or metropolitan area. (In one area several attempts were unsuccessful in locating a school willing to participate; therefore, it was necessary to omit this area and proceed with 87 schools.) Finally, stage three consisted of randomly selecting about 25 boys from each school.**

Given this type of clustered and stratified sample design, it is not appropriate to apply the standard, simple random sampling formulas to obtain estimates of sampling errors. The use of these formulas will almost always understate the actual sampling errors.

One measure of this understatement is the design effect (DEFF). For each sample estimate, the design effect is the square of the ratio of actual standard error to the expected standard error of the estimate from a simple random sample of the same size.

$$\text{DEFF(sample estimate)} = \left(\frac{\text{actual standard error of the estimate}}{\begin{array}{l}\text{expected standard error of the esti-}\\ \text{mate if the sample were simple random}\\ \text{of the same size}\end{array}} \right)^2$$

Each sample estimate may have a different design effect. For some of the simple means reported in this monograph, design effects may be as large as 5. A design effect of 5 would imply that the standard error of the estimate is the same as the standard error that would be expected from a simple random sample one-fifth as large as the actual sample. If the actual sample size is 2200, a design effect of 5 would mean that the standard error of the estimate would be the same as the standard error from a simple random sample of size = (actual size/DEFF) = 2200/5 = 440.

For most of the simple means our estimates suggest that design effects will be under 3.

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*This appendix was written by Martin Frankel, Sampling Section, Survey Research Center.

**We are grateful to Leslie Kish and Irene Hess for developing the sampling procedure used in this study.

Even when design effects for simple means are rather large, there exists a good deal of evidence to indicate that design effects for more complex statistics (e.g., differences of means, regression and MCA coefficients, correlation coefficients, MCA Etas and Betas) are significantly lower (Kish and Frankel, 1970).

The table below presents what we feel are conservative estimates of the standard errors for simple product-moment correlations (r's) and MCA Etas. For each value of r or Eta, two standard errors are given. The standard error in column 2 applies when the analysis is based on the entire sample (n = 2213). The standard error given in column 3 applies to analyses based on the 1374 respondents who were interviewed all three times.*

Standard Errors for r's and Eta's

Value of r or Eta	N = 2213	N = 1374
<.10	.032	.041
.15	.032	.040
.20	.031	.039
.25	.030	.038
.30	.029	.037
.35	.028	.036
.40	.027	.034
.45	.025	.033
.50	.024	.031
.60	.021	.026
.70	.016	.021
.80	.012	.015

The user is cautioned against using these standard errors for computing "exact" significance levels, confidence (or credible) intervals. These standard errors as well as the necessary normal distributional assumptions are approximations. For further discussion of some of the issues raised in this appendix, see Kish (1967), Kish and Frankel (1970), Frankel (1970).

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* For values of r and Eta greater than or equal to .15, we have used the formula $SE(r) = \sqrt{\frac{DEFF(1-r^2)^2}{N}}$ with an assumed DEFF of 2.3. We believe this to be a conservative value for DEFF.

Appendix B

THE DEVELOPMENT OF A SUMMARY MEASURE OF SOCIOECOMIC LEVEL*

It is obvious that in a longitudinal study such as the Youth in Transition project, the concept of socioeconomic level (SEL) must be treated extensively as both a causal and a control variable. Accordingly, in the design of the study and the development of interview and questionnaire instruments an effort was made to include items that would permit us to place each respondent along one or more SEL dimensions. In selecting such items for inclusion, it became quite clear that the concept of socioeconomic level has not led to a single widely shared operational definition. A variety of measures has been used in studies for purposes of "controlling on SES." Several of these measures were included in our data collection, with the hope that from them we would be able to develop a summary measure of SEL.

The major requirement of such a summary measure is that it be parsimonious. From a theoretical standpoint, to the extent that socioeconomic level is to be treated as a unitary concept, it should be possible to use the same SEL measure in a variety of relationships. From a more pragmatic standpoint, our data analyses would become impossibly complex if we were to apply different measures of SEL to different criterion dimensions or to different social subgroups. This is not to assert that socioeconomic level really is a single "general" factor; the arguments over such an issue might parallel those relating to the definition and measurement of the concept of intelligence. It is simply the case that for our research purposes it was necessary to develop a general and multi-purpose measure of SEL.

This appendix presents the evidence used to develop such a summary measure of SEL. This evidence includes correlations between SEL measures and a number of potentially related dimensions such as occupational aspiration, self-esteem, scores on tests of aptitude and achievement, and self-reports of delinquent behaviors. More generally, the appendix deals with the issue of whether the same items (a) can be used to predict to a variety of criteria, and (b) can yield at least roughly the same set of relationships for white and black subgroups in our sample of high school boys.

Measures of SEL. The items** considered for inclusion in the summary measure of SEL are presented in Table B-1 of this appendix. Of the total of ten items considered, three were

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*From: Bachman, J.G. "The Development of A Summary Measure of Socioeconomic Status." Paper read at the American Psychological Association convention, San Francisco, August, 1968.

**This usage of the term "item" includes some composite scores based on a number of questions.

Table B-1

Items Proposed for Inclusion in Summary SEL Index

Item Name	Missing Data	Description
Father's Occupation	12%	Ordinal measure based on Duncan level of social status coded from interview responses.**
*Mother's Occupation	59%	
Father's Education	9%	Five-point scale coded from interview; less than high school, some high school, high school graduate, some college. college graduate.
Mother's Education	6%	
Possessions in the Home	3%	First part of the Mathis "Environmental Participation Index" -- the respondent checks which of 19 items are available in his home. (A six-point bracketed scale was used in the present analyses: a code of "1" represents 9 or fewer items, "2" represents 10 or 11 items, "3" represents 12 or 13 items,... "6" represents 18 or 19 items.)
Number of Books in Home	2%	Six-point questionnaire scale. (The scale ranged from "1" representing "none, or very few," through "3" representing "one bookcase full," to "6" representing "a room full -- a library.")
Rooms per Person in the Home	6%	Number of rooms in home divided by number of persons living in home, based on responses to open-ended questionnaire items. (This ratio relates more strongly to "validating criteria" than do either of its ingredients taken alone.)
*Father's Income	36%	Eight-point precoded questionnaire scale, with "1" representing "Under $2000 " and "8" representing "$15000 or over"
*Family Total Income	39%	
***Adequacy of Family Finances	3%	Six-item adjective response scale in questionnaire making qualitative appraisal of family finances.

*Excluded from index due to excessive missing data.

**For a description of the coding procedure, see Arscott (1968). The occupational status scale is described by Reiss (1961).

***Excluded from index due to evidence of low validity.

dropped from further consideration because of high frequencies of missing data. The most notable example is Status of Mother's Occupation; since only mothers working outside the home were classified on this scale, a score was available for less than half of all respondents.

The product-moment correlations among the seven remaining SEL items are presented in Table B-2, along with means, standard deviations,* and frequencies of missing data. (Data for white and black subgroups are presented along with data for the total sample of tenth-grade boys; however, we will not deal with these and other subgroup analyses until later.) The intercorrelations in Table B-2 range from .04 to .58 for the total sample, with highest intercorrelations among father's occupational status, father's education, and mother's education. On the whole, similar patterns of intercorrelations were found for the white and black subgroups.

Selection of Items for Summary Measure of SEL. At this point the question remained as to which combination of items provides the most satisfactory summary measure of SEL. Our strategy in answering this question involved relating our SEL items to a number of "criterion" dimensions that might be influenced by socioeconomic level. This set of "validating criteria," sampled from a wide variety of variables being studied in the Youth in Transition project, is presented in Table B-3. Three different test scores were included in the list because it seemed quite possible that those tests relate differently to SEL items; one (the Quick Test) is viewed as a general measure of intelligence, another (the Matrices test) is intended to be a relatively culture-fair intelligence test, and the last (the Gates Paragraph Comprehension Test) is a measure of reading achievement.

The first step in our strategy called for examining bivariate relationships between each "validating criterion" and each of the SEL items. Our expectation was that some subset of the SEL items would emerge consistently as the strongest predictors of the several criteria. Table B-4 presents the correlations between SEL predictors and "validating criteria." The most consistently "predictable" criteria were found to be the test scores and occupational aspiration, while delinquent behavior was least "predictable." Turning to the seven SEL predictors we find that the first six items all show moderate to strong relationships with occupational aspiration and test scores. The "adequacy of family finances" item, by way of contrast, shows very little strength in predicting to any of the "validating criteria"; accordingly, this item was dropped from further consideration in building the summary measure of SEL.

While the correlations in Table B-4 indicate that each of the first six SEL items is a better predictor than the seventh, it is not yet clear whether a summary measure of SEL should

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*The standard deviations reported herein are derived from samples clustered in schools; consequently they may systematically underestimate the true standard deviation of the population.

Table B-2

Means, Standard Deviations, and Intercorrelations of SEL Items

NOTE: Each cell entry in this table consists of three separate scores as follows:

Total sample (N=2514 weighted cases)
Whites only (N=2177 weighted cases)
Blacks only (N=291 weighted cases)

SEL Item	Mean	Standard Deviation **	% Missing Data	Product-Moment Correlations					
				1	2	3	4	5	6
1. FATHER'S OCCUPATION	38.1 39.8 *23.9*	23.7 23.8 *17.7*	12 10 *24*						
2. FATHER'S EDUCATION	2.68 2.72 *2.31*	1.28 1.29 *1.17*	9 7 *27*	58 57 *47*					
3. MOTHER'S EDUCATION	2.76 2.82 *2.44*	1.05 1.03 *1.09*	6 5 *11*	38 37 *29*	51 51 *43*				
4. RESOURCES IN HOME ENVIRONMENT	4.53 4.66 *3.59*	1.23 1.15 *1.45*	3 2 *9*	31 27 *26*	34 33 *34*	33 32 *28*			
5. NUMBER OF BOOKS IN HOME	3.54 3.59 *3.16*	1.17 1.15 *1.25*	2 2 *7*	30 31 *10*	35 35 *27*	32 32 *19*	43 42 *39*		
6. ROOMS PER PERSON IN HOME	1.90 1.96 *1.51*	0.79 0.78 *0.74*	6 5 *15*	23 20 *19*	27 25 *34*	25 22 *33*	28 23 *30*	24 23 *20*	
7. ADEQUACY OF FAMILY FINANCES	3.08 * *2.94*	0.74 * *0.97*	3 * *8*	21 * *09*	18 * *14*	15 * *04*	23 * *14*	19 * *21*	* * *

Decimals omitted.

*Correlation not computed.

**Based on clustered sample.

Table B-3

Measures Used as Validating Criteria

Measure	Description
Occupational Aspiration	Ordinal measure based on Duncan level of social status, coded from interview statement of respondent's future plans.
Internal Control	Rotter's measure of perceived personal control over one's fate, based on 15 questionnaire items.
Self-Esteem	Index based on 14 questionnaire items.
Test Anxiety	Index based on 16 questionnaire items, adapted by Irwin Katz from the Mandler-Sarason Test Anxiety Questionnaire.
Grades	Self-report of average grade in previous year (9th grade), interview item.
Delinquent Behavior	Index based on 26 self-report items in a special confidential questionnaire, adapted from a measure developed by Martin Gold.
Quick Test of Intelligence	An individually-administered test of recognition vocabulary, developed by Ammons and Ammons.
Matrices Test	A group-administered test of reasoning ability, developed by the U.S. Employment Service and patterned after Raven's Progressive Matrices.
Reading Achievement	Group-administered Paragraph Comprehension Test taken from the Gates Reading Survey.

Table B-4

Correlations Between SEL Items and "Validating Criteria"

NOTE: Each cell in this table consists of three separate scores as follows:

Total Sample (N=2514 weighted cases)
Whites Only (N=2177 weighted cases)
Blacks Only (N=291 weighted cases)

	Validating Criteria								
SEL Items	Occupational Aspiration	Internal Control	Self-Esteem	Test Anxiety	Grades (9th grade average)	Delinquent Behavior	Quick Test of Intelligence	Matrices Test	Reading Achievement
MEAN	60.3 61.4 *54.0*	1.66 1.67 *1.61*	3.71 3.69 *3.81*	1.49 1.48 *1.53*	4.00 4.02 *3.81*	1.63 1.63 *1.56*	108.5 110.4 95.5	22.4 23.3 *16.0*	36.0 37.0 *28.7*
SD**	26.5 26.2 *27.6*	0.19 0.19 *0.17*	0.50 0.51 *0.46*	0.24 0.24 *0.21*	0.72 0.73 *0.63*	0.53 0.52 *0.60*	12.4 10.8 *14.8*	5.8 5.0 *7.2*	6.2 4.9 *9.0*
1. FATHER'S OCCUPATION	30 31 *21*	10 08 *09*	06 07 *02*	-05 -03 *-08*	15 15 *-03*	04 03 *-04*	31 26 *25*	22 17 *09*	27 24 *14*
2. FATHER'S EDUCATION	31 31 *27*	14 12 *28*	13 13 *13*	-10 -10 *-13*	17 18 *07*	01 01 *03*	32 30 *37*	23 20 *29*	28 25 *40*
3. MOTHER'S EDUCATION	28 28 *18*	10 08 *12*	11 13 *02*	-12 -11 *-11*	19 20 *04*	-05 -05 *-11*	31 28 *29*	21 16 *29*	25 23 *24*
4. POSSESSIONS IN THE HOME	22 20 *21*	14 11 *20*	08 10 *13*	-10 -07 *-20*	15 14 *10*	02 00 *04*	34 22 *44*	35 24 *41*	35 26 *34*
5. NUMBER OF BOOKS IN HOME	22 23 *04*	15 14 *12*	09 10 *03*	-09 -09 *04*	16 16 *13*	03 03 *-03*	28 26 *18*	25 22 *18*	26 23 *26*
6. ROOMS PER PERSON	20 18 *24*	07 04 *18*	08 11 *-03*	-10 -07 *-15*	20 21 *04*	01 -02 *11*	30 24 *30*	21 12 *33*	26 19 *34*
7. ADEQUACY OF FAMILY FINANCES	10 * *11*	01 * *01*	10 * *-01*	-03 * *01*	07 * *04*	-00 * *04*	06 * *01*	09 * *10*	07 * *05*

Decimals omitted from correlation coefficients.

*Not Computed

**Based on clustered sample.

contain all six items, nor is it clear whether there is a single optimal weighting of items that would maximize multivariate prediction of each of the "validating criteria." In order to obtain further evidence bearing on these questions, a series of stepwise multiple regression analyses were done; the six SEL items were permitted to enter as predictors* for each "validating criterion."

Two observations may be based on the results of the multiple regression analyses, presented in Table B-5. First, the multiple correlations shown along the bottom row of the table are higher, often substantially higher, than the zero-order relationships shown in Table B-4. This general finding was of course expected, but the size of the multiple correlations may be taken as a sort of upper limit obtainable by a summary measure optimally weighting our six SEL items to predict to the specific criterion variable in question. The second observation is based on an examination of the beta weights displayed in the remainder of Table B-5. These results do not indicate any single weighting of SEL items that is common to all or even most "validating criteria." Quite the contrary, the beta weights vary markedly from one criterion to another, showing much less stability and consistency than do the correlations in Table B-4.

Computation of Summary SEL Index. Given that all six SEL items appeared to provide at least some degree of prediction to one or more of the "validating criteria," and given the absence of evidence for a set of "optimizing" weights to be applied to these items, it seemed appropriate to derive a mean score in which the six items would contribute equally.** This step was carried out following the procedures summarized in Table B-6.

Correlations between the summary SEL index and each of the "validating criteria" are presented in Table B-7. These correlations are nearly identical to the multiple correlations that appear at the bottom of Table B-5, even though the multiple correlations are based on an optimal set of item weightings for each criterion whereas the index score weights the six SEL items equally.***

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*The specified criterion for entering a variable as a predictor was that it contribute a significant ($p \leq .05$) increment to variance explained.

**A recent paper by Green (1968) argues strongly in favor of the equal-weighting procedure adopted here.

***This conclusion is less clear for the black subgroup. In this case the multiple correlations are somewhat higher than the correlations with the summary SEL index. This difference is attributable to the somewhat lower reliability of data based on a sample of less than three hundred (as contrasted with the total sample in excess of two thousand). The multiple regression analysis takes maximum "advantage" of the error variance in the smaller black subgroup; it is reasonable to conclude, therefore, that the multiple correlations for blacks exaggerate the true relationships.

Table B-5

Multiple Regression Analyses Relating SEL Items
to "Validating Criteria"

NOTE: Each cell entry in this table consists of three separate scores as follows:

Total Sample (N=2514 weighted cases)
Whites Only (N=2177 weighted cases)
Blacks Only (N=291 weighted cases)

		Validating Criteria								
	SEL Items	Occupational Aspiration	Internal Control	Self-Esteem	Test Anxiety	Grades (9th grade avg.)	Delinquent Behavior	Quick Test of Intelligence	Matrices Test	Reading Achievement
Beta Weights	1. FATHER'S OCCUPATION	15 16 *08*	-- -- *-07*	-04 -03 *-07*	04 06 *02*	03 04 *-08*	05 05 *-06*	12 08 *04*	07 04 *-12*	10 10 *-09*
	2. FATHER'S EDUCATION	10 10 *16*	08 07 *26*	10 08 *18*	-05 -06 *-07*	03 04 *05*	01 -- *09*	07 10 *17*	03 07 *13*	06 07 *28*
	3. MOTHER'S EDUCATION	11 12 *02*	-- -- *-03*	05 06 *-03*	-08 -08 *-03*	09 10 *01*	-09 -08 *-20*	11 12 *08*	04 02 *13*	06 07 *02*
	4. RESOURCES IN HOME	06 04 *12*	08 05 *12*	02 03 *15*	-05 -01 *-22*	03 02 *06*	02 -- *06*	17 05 *32*	25 14 *32*	21 13 *17*
	5. NUMBER OF BOOKS IN HOME	06 08 *-10*	09 10 *--*	04 04 *-04*	-03 -05 *16*	07 06 *10*	03 04 *-06*	07 11 *-04*	08 11 *-03*	07 06 *08*
	6. ROOMS PER PERSON IN HOME	08 07 *15*	01 -02 *08*	04 06 *-10*	-05 -04 *-07*	14 15 *-01*	01 -02 *15*	16 14 *11*	09 03 *17*	13 09 *19*
	MULTIPLE R	39 39 *35*	19 16 *32*	15 17 *21*	16 15 *27*	27 27 *16*	09 08 *22*	47 40 *52*	39 29 *50*	43 35 *50*

Decimals Omitted

Table B-6

Procedures for Computing Summary SEL Index

The summary SEL index consists of a mean score computed from transformed versions of the six SEL ingredients. Up to two missing data cases were permitted; i.e., the index was computed for any respondent whose data record contained four or more of the six ingredients. In order that the six ingredients would contribute equally to the index score, and in order that missing data would not produce distortions, a linear transformation of each ingredient was undertaken. The transformation consisted of (Step A) multiplying each ingredient by a weighting factor and (Step B) adding a constant; the effect was to give each transformed ingredient a standard deviation of approximately 1.2 and a mean of exactly 5.00.

SEL Ingredient	Initial Values		Weighting Factor	Values after Weighting		Constant Added	Transformed Values	
	S.D.**	Mean	(Step A)	S.D.**	Mean	(Step B)	S.D.**	Mean
FATHER'S OCCUPATION*	2.42	3.33	0.5	1.21	1.67	3.33	1.21	5.00
FATHER'S EDUCATION	1.28	2.68	1.0	1.28	2.68	2.32	1.28	5.00
MOTHER'S EDUCATION	1.05	2.76	1.0	1.05	2.76	2.24	1.05	5.00
RESOURCES IN HOME ENVIRONMENT	1.23	4.53	1.0	1.23	4.53	0.47	1.23	5.00
NUMBER OF BOOKS IN HOME	1.17	3.54	1.0	1.17	3.54	1.46	1.17	5.00
ROOMS PER PERSON IN HOME*	1.43	3.10	0.8	1.14	2.48	2.52	1.14	5.00

*Special bracketed versions of Father's Occupation and Rooms per Person in Home were used as a convenience in computing the summary SEL index; thus the means and standard deviations shown in this table do not agree with those presented in Table B-2.

**Based on clustered sample.

Table B-7

Product-Moment Correlations Between Summary SEL Index and "Validating Criteria"

NOTE: Each cell in this table consists of three separate scores as follows:

Total Sample (N=2514 weighted cases)
Whites Only (N=2177 weighted cases)
Blacks Only (N=291 weighted cases)

			Product-Moment Correlations with Validating Criteria								
	Mean Score	Standard Deviation*	Occupational Aspiration	Internal Control	Self-Esteem	Test Anxiety	Grades (9th grade avg.)	Delinquent Behavior	Quick Test of Intelligence	Matrices Test	Reading Achievement
SUMMARY SEL INDEX	4.99	0.80	.38	.17	.12	-.14	.25	.01	.45	.36	.41
	5.07	0.77	.38	.14	.15	-.12	.25	.00	.38	.27	.34
	4.44	*0.78*	*.32*	*.25*	*.08*	*-.17*	*.11*	*-.02*	*.47*	*.45*	*.46*

*Based on clustered sample.

One criterion dimension which might appear more "predictable" from the multiple regression analysis than from the SEL index is delinquent behavior. In this case we find that a very small multiple correlation occurs when some SEL items are assigned positive weights and others are given negative weights. The overall "prediction" thus obtained remains trivial (R = .08 for the total sample); moreover, the assignment of some positive and other negative weights to SEL items seems incongruous. We conclude, in short, that the zero relationship obtained with the SEL index is the more valid indicator of the true relationship between SEL and our measure of delinquent behavior.

More generally, it seems safe to conclude that the six-item summary SEL index is successful in predicting to a number of "validating criteria." It passes the first part of our test of parsimony.

Racial Similarities in SEL Relationships. Our second test of a measure of SEL is that it be appropriate for application to different racial subgroups. Evidence bearing on this issue is presented in Tables B-2, B-4, B-5, and B-7; in each table separate data are presented for white and black subgroups (in addition to data for the entire sample).

The intercorrelations among SEL items in Table B-2, and between SEL items and criteria in Table B-4, do not indicate any patterns of relationships within white or black subgroups that are clearly different from those for the total sample. Occasional differences do appear; however, there is little indication that some SEL items are systematically better predictors for one or the other racial subgroup.* The beta weights presented in Table B-5 show less overall similarity between racial groups, perhaps, but once again there is no pattern of systematic differences in SEL predictors. Finally, the relationships between the six-item SEL summary index and the "validating criteria" (shown in Table B-7) are generally similar for the two racial subgroups: fairly strong positive correlations with test scores and occupational aspiration; lower positive correlations with grades, internal control, and self-esteem; low negative correlation with test anxiety; and no correlation with delinquency.

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*It should be noted that because of the limited number of cases involved, correlations based on the black subgroup are much less stable than those for the total sample and the white subgroup. It is not necessary for present purposes to develop exact confidence intervals for correlations; however, the following guidelines may be helpful. The .05 confidence interval for a correlation based on 291 weighted cases is approximately ±.115. Taking account of missing data and weighting, most correlations for the black subgroup are actually based on roughly 200 cases, in which case a .05 confidence interval of approximately ±.14 is more appropriate.

The absence of strong systematic racial differences in correlations between the summary SEL index and the "validating criteria" provides an answer to one of the major questions motivating this investigation: it appears that the same set of SEL items, when equally weighted and combined into a summary score, is usable for both black and white subgroups. Given this conclusion, we consider that the six-item summary SEL index passes the second part of our test of parsimony.

A Note on Circularity. There is a degree of circularity in using a number of measures as "validating criteria" for developing a measure of SEL, and then using the same data to consider the effects of SEL (as we have done in this monograph). This circularity would have been particularly troublesome had we found only one or two SEL items that predicted to the "validating criteria," or if certain SEL items had worked for one criterion while different items were needed to predict to another. Had such been the case, our relationships with SEL might have been heavily influenced by the maximization of random error. In fact, however, of the seven eligible SEL items shown in Tables B-2 and B-4, only one was excluded from the equal-weighted summary index. Thus while the logical circularity remains, we consider the relationships with the SEL summary index to be sufficiently sound to warrant the emphasis we've given them in this volume.

Appendix C

BIVARIATE RELATIONSHIPS AMONG BACKGROUND CHARACTERISTICS

This appendix presents a total of 36 bivariate frequency tables showing all pairings of the eight family background variables and the Quick Test of intelligence. Each table relates one variable (e.g., socioeconomic level) to another (e.g., number of siblings), with cell entries indicating number of weighted cases.

The tables are adapted directly from computer output. Each table is labelled according to the two background variables presented; however, specific categories within each variable are designated only by code number. The category names corresponding to the code numbers are provided in the listing below.

An example of how these tables might be used may prove helpful. Someone interested in the (weighted) number of boys in our sample who come from very low socioeconomic level homes broken by divorce would consult the second table; cell 1,5 -- that is, the cell corresponding to category (1) of socioeconomic level and category (5) of the broken home variable -- indicates that 27 cases, or just over 1 percent of the total sample of 2514, come from very low SEL homes broken by divorce.

Background Variables with Code Categories and Number of Cases Specified:

Socioeconomic Level		Cases
(1)	low	166
(2)		384
(3)		687
(4)		648
(5)		363
(6)	high	180
(9)	Missing Data	84

Number of Siblings		
(0)	0 siblings	139
(1)	1 sibling	506
(2)	2 siblings	562
(3)	3 siblings	482
(4)	4 siblings	311
(5)	5 siblings	194
(6)	6 siblings	125
(7)	7 or more siblings	193

Broken Home		
(0)	Home broken by death	200
(1)	Home intact	1997
(5)	Home broken by divorce, etc.	317

Family Relations		Cases
(1)	poor	106
(2)		199
(3)		344
(4)		482
(5)		555
(6)		427
(7)		259
(8)	good	90
(9)	Missing Data	52

Religious Preference		
(0)	Jewish	65
(1)	Roman Catholic, Eastern Orthodox	492
(2)	Baptist	564
(3)	Church of Christ, etc.	162
(4)	Lutheran	203
(5)	Methodist	344
(6)	Presbyterian	177
(7)	Episcopal	53
(8)	Other Protestant	94
(9)	Other and Missing Data	360

Family Political Preference		Cases
(1)	Strongly Republican	181
(2)	Mildly Republican	399
(3)	Mildly Democrat	600
(4)	Strongly Democrat	347
(5)	Other	987

Community Size		Cases
(1)	Farm	275
(2)	Country, but not a farm	290
(3)	Town	722
(4)	Small city	525
(5)	Large city	665
(9)	Other and Missing Data	37

Race (Five-Category)		Cases
(1)	All whites	2177
(2)	Integrated blacks	79
(3)	Northern segregated blacks	72
(4)	Southern segregated blacks	140
(5)	Other racial minorities	46

Quick Test of Intelligence		Cases
(1)	0 - 91	230
(2)	92 - 102	465
(3)	103 - 113	940
(4)	114 - 124	676
(9)	125 - 150	203

Tables:

Number of Siblings

Socioeconomic Level CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	4	13	15	23	27	20	17	47	0	0	0
(2)	14	46	60	70	58	37	45	54	0	0	0
(3)	34	140	152	148	67	73	27	46	0	0	0
(4)	40	158	170	119	90	31	19	21	0	0	0
(5)	26	97	105	74	36	14	7	6	0	0	0
(6)	11	47	50	37	19	10	2	4	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	10	6	10	11	14	9	9	15	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Broken Home

Socioeconomic Level CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	15	123	0	0	0	29	0	0	0	0	0
(2)	37	273	0	0	0	74	0	0	0	0	0
(3)	43	565	0	0	0	79	0	0	0	0	0
(4)	35	552	0	0	0	61	0	0	0	0	0
(5)	31	311	0	0	0	23	0	0	0	0	0
(6)	20	146	0	0	0	14	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	18	43	0	0	0	23	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Family Relations

Socioeconomic Level CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	5	16	28	37	38	24	13	2	3	0
(2)	0	19	30	79	70	73	54	36	19	4	0
(3)	0	36	76	96	132	139	111	64	26	7	0
(4)	0	20	45	77	137	144	119	86	15	5	0
(5)	0	15	16	41	67	99	72	35	18	2	0
(6)	0	9	6	12	31	52	43	20	7	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	2	10	11	8	10	4	5	3	31	0
(10)	0	0	0	0	0	0	0	0	0	0	0

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Religious Preference

Socioeconomic Level

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	22	78	9	10	16	5	0	6	20	0
(2)	2	72	127	29	23	41	19	1	14	56	0
(3)	7	162	155	55	54	91	39	6	26	92	0
(4)	15	140	122	37	77	102	44	16	23	72	0
(5)	26	58	58	21	28	62	44	17	12	39	0
(6)	15	26	11	8	9	30	25	13	13	30	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	12	13	3	2	2	1	0	0	51	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Family Political Preference

Socioeconomic Level

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	11	21	39	23	72	0	0	0	0	0
(2)	0	20	34	94	63	173	0	0	0	0	0
(3)	0	40	88	189	118	252	0	0	0	0	0
(4)	0	45	108	170	87	238	0	0	0	0	0
(5)	0	45	94	64	31	131	0	0	0	0	0
(6)	0	20	45	35	20	60	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	9	9	5	61	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Community Size

Socioeconomic Level

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	44	40	42	15	21	0	0	0	4	0
(2)	0	66	61	88	59	103	0	0	0	7	0
(3)	0	88	94	175	140	179	0	0	0	11	0
(4)	0	54	68	196	146	178	0	0	0	6	0
(5)	0	12	12	135	90	111	0	0	0	5	0
(6)	0	3	10	74	50	41	0	0	0	2	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	8	5	12	25	32	0	0	0	2	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Race (Five-Category)

Socioeconomic Level

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	108	10	1	41	0	0	0	0	6	0
(2)	0	288	15	12	49	0	0	0	0	16	0
(3)	0	610	12	24	29	0	0	0	0	12	0
(4)	0	600	21	11	12	0	0	0	0	4	0
(5)	0	352	9	3	0	0	0	0	0	1	0
(6)	0	171	5	2	0	0	0	0	0	2	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	48	3	15	9	0	0	0	0	5	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Quick Test of Intelligence

Socioeconomic Level

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	56	47	48	11	5	0	0	0	0	0
(2)	0	75	105	136	56	12	0	0	0	0	0
(3)	0	49	134	252	190	32	0	0	0	0	0
(4)	0	22	105	255	210	52	0	0	0	0	0
(5)	0	5	45	123	139	53	0	0	0	0	0
(6)	0	0	3	61	69	47	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	24	22	25	11	2	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

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Broken Home

Number of Siblings	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	(0)	19	98	0	0	0	22	0	0	0	0	0
	(1)	71	426	0	0	0	50	0	0	0	0	0
	(2)	38	478	0	0	0	46	0	0	0	0	0
	(3)	37	302	0	0	0	53	0	0	0	0	0
	(4)	25	234	0	0	0	52	0	0	0	0	0
	(5)	16	146	0	0	0	32	0	0	0	0	0
	(6)	9	95	0	0	0	22	0	0	0	0	0
	(7)	25	128	0	0	0	40	0	0	0	0	0
	(8)	0	0	0	0	0	0	0	0	0	0	0
	(9)	0	0	0	0	0	0	0	0	0	0	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

Family Relations

Number of Siblings	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	(0)	0	5	5	17	33	38	21	7	12	1	0
	(1)	0	15	30	68	84	103	111	70	20	6	0
	(2)	0	26	38	70	120	122	99	61	18	8	0
	(3)	0	11	45	72	101	101	82	47	17	6	0
	(4)	0	22	25	40	56	66	50	37	9	6	0
	(5)	0	8	26	21	38	42	28	14	9	8	0
	(6)	0	3	7	25	15	31	20	15	3	7	0
	(7)	0	16	23	31	35	52	16	8	2	10	0
	(8)	0	0	0	0	0	0	0	0	0	0	0
	(9)	0	0	0	0	0	0	0	0	0	0	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

Religious Preference

Number of Siblings	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	(0)	5	23	34	7	10	11	12	2	5	30	0
	(1)	38	94	103	22	56	71	42	13	12	56	0
	(2)	16	104	124	42	42	83	34	16	28	73	0
	(3)	3	89	85	46	46	64	49	13	21	66	0
	(4)	0	77	69	15	25	51	13	4	15	42	0
	(5)	1	36	42	16	9	34	12	3	5	36	0
	(6)	0	26	42	4	5	13	8	0	3	25	0
	(7)	2	43	65	10	10	17	7	2	5	32	0
	(8)	0	0	0	0	0	0	0	0	0	0	0
	(9)	0	0	0	0	0	0	0	0	0	0	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

Family Political Preference

Number of Siblings	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	(0)	0	5	17	33	24	60	0	0	0	0	0
	(1)	0	40	104	123	65	175	0	0	0	0	0
	(2)	0	47	104	122	75	214	0	0	0	0	0
	(3)	0	32	76	121	53	200	0	0	0	0	0
	(4)	0	25	45	91	42	118	0	0	0	0	0
	(5)	0	10	22	48	35	79	0	0	0	0	0
	(6)	0	13	12	27	22	52	0	0	0	0	0
	(7)	0	9	19	45	31	89	0	0	0	0	0
	(8)	0	0	0	0	0	0	0	0	0	0	0
	(9)	0	0	0	0	0	0	0	0	0	0	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

Community Size

Number of Siblings	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	(0)	0	17	13	39	22	46	0	0	0	2	0
	(1)	0	32	51	158	118	139	0	0	0	9	0
	(2)	0	41	51	176	121	168	0	0	0	5	0
	(3)	0	54	59	140	100	119	0	0	0	10	0
	(4)	0	37	48	81	80	62	0	0	0	3	0
	(5)	0	26	22	50	38	54	0	0	0	4	0
	(6)	0	15	22	39	18	28	0	0	0	4	0
	(7)	0	53	24	39	28	49	0	0	0	0	0
	(8)	0	0	0	0	0	0	0	0	0	0	0
	(9)	0	0	0	0	0	0	0	0	0	0	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

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Race (Five-Category)

Number of Siblings

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	117	11	4	6	0	0	0	0	1	0
(1)	0	480	8	4	9	0	0	0	0	6	0
(2)	0	531	8	9	10	0	0	0	0	4	0
(3)	0	435	6	11	22	0	0	0	0	8	0
(4)	0	278	7	6	17	0	0	0	0	3	0
(5)	0	142	19	15	13	0	0	0	0	5	0
(6)	0	86	12	7	15	0	0	0	0	6	0
(7)	0	108	8	16	48	0	0	0	0	13	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Quick Test of Intelligence

Number of Siblings

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	2	20	60	43	14	0	0	0	0	0
(1)	0	14	64	186	185	58	0	0	0	0	0
(2)	0	24	87	234	159	58	0	0	0	0	0
(3)	0	49	91	171	140	31	0	0	0	0	0
(4)	0	27	75	115	70	24	0	0	0	0	0
(5)	0	26	45	72	43	8	0	0	0	0	0
(6)	0	25	33	49	14	5	0	0	0	0	0
(7)	0	63	50	53	22	5	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Family Relations

Broken Home

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	8	21	20	35	53	21	25	10	7	0
(1)	0	71	141	279	391	426	358	222	77	32	0
(2)	0	0	0	0	0	0	0	0	0	0	0
(3)	0	0	0	0	0	0	0	0	0	0	0
(4)	0	0	0	0	0	0	0	0	0	0	0
(5)	0	27	37	45	56	76	48	12	3	13	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Religious Preference

Broken Home

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	4	46	48	18	11	23	5	4	6	35	0
(1)	40	401	419	132	170	269	159	45	77	265	0
(2)	0	0	0	0	0	0	0	0	0	0	0
(3)	0	0	0	0	0	0	0	0	0	0	0
(4)	0	0	0	0	0	0	0	0	0	0	0
(5)	1	45	97	12	22	52	13	4	11	60	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0
[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	0	0	[illegible]	0	0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Family Political Preference

Broken Home

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	9	39	61	20	71	0	0	0	0	0
(1)	0	160	324	467	278	768	0	0	0	0	0
(2)	0	0	0	0	0	0	0	0	0	0	0
(3)	0	0	0	0	0	0	0	0	0	0	0
(4)	0	0	0	0	0	0	0	0	0	0	0
(5)	0	12	36	72	49	148	0	0	0	0	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

BEST AVAILABLE COPY

Community Size

Broken Home

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	18	26	64	37	54	0	0	0	1	0
(1)	0	225	237	584	418	509	0	0	0	24	0
(2)	0	0	0	0	0	0	0	0	0	0	0
(3)	0	0	0	0	0	0	0	0	0	0	0
(4)	0	0	0	0	0	0	0	0	0	0	0
(5)	0	32	27	74	70	102	0	0	0	12	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Race (Five-Category)

Broken Home

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	162	10	7	14	0	0	0	0	7	0
(1)	0	1792	51	44	80	0	0	0	0	30	0
(2)	0	0	0	0	0	0	0	0	0	0	0
(3)	0	0	0	0	0	0	0	0	0	0	0
(4)	0	0	0	0	0	0	0	0	0	0	0
(5)	0	223	18	21	46	0	0	0	0	9	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Quick Test of Intelligence

Broken Home

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	21	42	71	54	12	0	0	0	0	0
(1)	0	141	364	763	556	173	0	0	0	0	0
(2)	0	0	0	0	0	0	0	0	0	0	0
(3)	0	0	0	0	0	0	0	0	0	0	0
(4)	0	0	0	0	0	0	0	0	0	0	0
(5)	0	68	55	106	66	18	0	0	0	0	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Religious Preference

Family Relations

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	2	25	20	0	6	16	4	3	3	27	0
(2)	4	37	43	20	18	25	13	2	8	29	0
(3)	6	67	75	20	42	34	27	6	7	60	0
(4)	13	107	101	39	42	51	37	11	19	62	0
(5)	14	121	128	38	35	74	49	13	18	65	0
(6)	12	76	105	20	29	74	29	6	18	54	0
(7)	11	48	60	13	21	52	10	9	12	23	0
(8)	3	10	22	10	7	17	7	3	6	5	0
(9)	0	1	6	2	3	1	1	0	3	35	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Family Political Preference

Family Relations

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	7	14	21	13	51	0	0	0	0	0
(2)	0	15	27	57	26	74	0	0	0	0	0
(3)	0	15	48	87	50	144	0	0	0	0	0
(4)	0	35	78	119	66	184	0	0	0	0	0
(5)	0	38	55	131	81	210	0	0	0	0	0
(6)	0	35	78	105	62	147	0	0	0	0	0
(7)	0	27	38	59	35	100	0	0	0	0	0
(8)	0	9	20	15	12	34	0	0	0	0	0
(9)	0	0	1	6	2	43	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

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Community Size

	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Family Relations	(0)	0	0	0	0	0	0	0	0	0	0	0
	(1)	0	10	11	26	22	35	0	0	0	2	0
	(2)	0	23	30	49	44	49	0	0	0	4	0
	(3)	0	38	35	98	61	103	0	0	0	5	0
	(4)	0	52	48	138	109	128	0	0	0	7	0
	(5)	0	55	55	176	123	132	0	0	0	10	0
	(6)	0	41	56	114	95	113	0	0	0	8	0
	(7)	0	37	32	89	38	62	0	0	0	1	0
	(8)	0	14	13	27	17	19	0	0	0	0	0
	(9)	0	5	2	5	16	24	0	0	0	0	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

Race (Five-Category)

	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Family Relations	(0)	0	0	0	0	0	0	0	0	0	0	0
	(1)	0	91	6	2	5	0	0	0	0	2	0
	(2)	0	170	4	4	19	0	0	0	0	2	0
	(3)	0	295	7	12	25	0	0	0	0	5	0
	(4)	0	420	15	9	24	0	0	0	0	14	0
	(5)	0	475	20	16	35	0	0	0	0	5	0
	(6)	0	385	11	6	16	0	0	0	0	9	0
	(7)	0	230	10	5	10	0	0	0	0	4	0
	(8)	0	81	1	1	4	0	0	0	0	3	0
	(9)	0	26	5	17	2	0	0	0	0	2	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

Quick Test of Intelligence

	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Family Relations	(0)	0	0	0	0	0	0	0	0	0	0	0
	(1)	0	17	20	37	27	12	0	0	0	0	0
	(2)	0	28	34	71	53	13	0	0	0	0	0
	(3)	0	43	84	127	74	16	0	0	0	0	0
	(4)	0	41	98	184	125	34	0	0	0	0	0
	(5)	0	60	93	154	158	50	0	0	0	0	0
	(6)	0	25	63	155	135	45	0	0	0	0	0
	(7)	0	13	41	100	75	26	0	0	0	0	0
	(8)	0	1	16	47	19	7	0	0	0	0	0
	(9)	0	9	16	21	6	0	0	0	0	0	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

Family Political Preference

	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Religious Preference	(0)	0	2	3	27	10	23	0	0	0	0	0
	(1)	0	19	40	163	94	176	0	0	0	0	0
	(2)	0	43	93	130	105	193	0	0	0	0	0
	(3)	0	11	33	41	16	61	0	0	0	0	0
	(4)	0	18	57	36	25	67	0	0	0	0	0
	(5)	0	35	66	84	40	115	0	0	0	0	0
	(6)	0	26	44	31	17	59	0	0	0	0	0
	(7)	0	4	16	12	3	18	0	0	0	0	0
	(8)	0	10	23	15	8	38	0	0	0	0	0
	(9)	0	9	24	61	29	237	0	0	0	0	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

Community Size

	CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Religious Preference	(0)	0	0	0	27	13	35	0	0	0	0	0
	(1)	0	29	31	130	126	170	0	0	0	7	0
	(2)	0	87	53	163	87	128	0	0	0	6	0
	(3)	0	21	23	50	36	31	0	0	0	1	0
	(4)	0	67	9	26	62	53	0	0	0	1	0
	(5)	0	34	58	132	72	50	0	0	0	8	0
	(6)	0	13	21	56	40	41	0	0	0	6	0
	(7)	0	2	3	15	16	16	0	0	0	1	0
	(8)	0	17	17	25	16	17	0	0	0	2	0
	(9)	0	31	35	98	67	124	0	0	0	5	0
	(10)	0	0	0	0	0	0	0	0	0	0	0

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Race (Five-Category)

Religious Preference

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	64	0	0	1	0	0	0	0	0	0
(1)	0	454	4	3	7	0	0	0	0	24	0
(2)	0	336	40	31	95	0	0	0	0	2	0
(3)	0	142	7	2	9	0	0	0	0	2	0
(4)	0	191	2	4	6	0	0	0	0	0	0
(5)	0	309	13	6	15	0	0	0	0	2	0
(6)	0	170	3	2	1	0	0	0	0	1	0
(7)	0	51	1	1	0	0	0	0	0	0	0
(8)	0	85	0	2	0	0	0	0	0	3	0
(9)	0	212	5	21	6	0	0	0	0	12	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Quick Test of Intelligence

Religious Preference

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	1	3	14	38	9	0	0	0	0	0
(1)	0	31	54	188	142	37	0	0	0	0	0
(2)	0	99	125	209	106	25	0	0	0	0	0
(3)	0	22	32	61	38	9	0	0	0	0	0
(4)	0	15	30	74	66	18	0	0	0	0	0
(5)	0	26	55	146	81	32	0	0	0	0	0
(6)	0	3	25	64	61	24	0	0	0	0	0
(7)	0	1	6	18	18	10	0	0	0	0	0
(8)	0	2	13	31	34	14	0	0	0	0	0
(9)	0	30	78	135	92	25	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Community Size

Family Political Preference

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	22	23	57	45	31	0	0	0	3	0
(2)	0	45	40	129	90	84	0	0	0	8	0
(3)	0	62	76	201	105	143	0	0	0	9	0
(4)	0	38	34	80	76	116	0	0	0	3	0
(5)	0	104	117	256	205	291	0	0	0	14	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Race (Five-Category)

Family Political Preference

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	165	0	1	14	0	0	0	0	1	0
(2)	0	374	3	3	14	0	0	0	0	5	0
(3)	0	536	24	11	21	0	0	0	0	8	0
(4)	0	267	18	26	34	0	0	0	0	2	0
(5)	0	835	34	31	57	0	0	0	0	30	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Quick Test of Intelligence

Family Political Preference

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	15	25	68	50	19	0	0	0	0	0
(2)	0	32	48	141	122	56	0	0	0	0	0
(3)	0	46	110	213	186	45	0	0	0	0	0
(4)	0	40	78	131	75	23	0	0	0	0	0
(5)	0	57	200	397	243	60	0	0	0	0	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	0	0	0	0	0	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

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Race (Five-Category)

Community Size

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	234	3	0	34	0	0	0	0	4	0
(2)	0	260	7	3	17	0	0	0	0	3	0
(3)	0	650	23	6	36	0	0	0	0	7	0
(4)	0	475	15	16	12	0	0	0	0	7	0
(5)	0	524	31	47	41	0	0	0	0	22	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	34	0	0	0	0	0	0	0	3	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Quick Test of Intelligence

Community Size

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	51	67	94	50	13	0	0	0	0	0
(2)	0	36	51	105	76	18	0	0	0	0	0
(3)	0	54	105	265	221	69	0	0	0	0	0
(4)	0	32	55	200	152	42	0	0	0	0	0
(5)	0	52	131	256	168	57	0	0	0	0	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	4	8	12	9	4	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

Quick Test of Intelligence

Race (Five-Category)

CODE	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(0)	0	0	0	0	0	0	0	0	0	0	0
(1)	0	95	356	842	643	201	0	0	0	0	0
(2)	0	10	15	39	14	1	0	0	0	0	0
(3)	0	17	20	26	9	0	0	0	0	0	0
(4)	0	98	21	19	4	0	0	0	0	0	0
(5)	0	0	0	0	0	0	0	0	0	0	0
(6)	0	0	0	0	0	0	0	0	0	0	0
(7)	0	0	0	0	0	0	0	0	0	0	0
(8)	0	0	0	0	0	0	0	0	0	0	0
(9)	0	12	13	14	6	1	0	0	0	0	0
(10)	0	0	0	0	0	0	0	0	0	0	0

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Appendix D

PRODUCT-MOMENT CORRELATIONS AMONG CRITERION DIMENSIONS

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Product-Moment Correlations Among Criterion Dimensions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(2)	0.6761													
(3)	0.6635	0.7122												
(4)	0.5637	0.5716	0.6040											
(5)	0.4336	0.5036	0.3826	0.3571										
(6)	0.0724	0.0768	0.0576	0.0606	0.2305									
(7)	-0.2535	-0.2784	-0.3031	-0.2240	-0.2806	-0.5146								
(8)	0.2085	0.2047	0.2161	0.1834	0.2322	0.3424	-0.1793							
(9)	0.1964	0.1867	0.1718	0.1873	0.2920	0.4453	-0.2549	0.7164						
(10)	-0.2618	-0.2589	-0.2520	-0.2266	-0.2239	-0.0541	0.2230	0.0245	-0.0219					
(11)	-0.1489	-0.1621	-0.1397	-0.1717	-0.0253	0.2560	-0.1923	0.0218	0.1427	-0.1908				
(12)	-0.1984	-0.2040	-0.2754	-0.1892	-0.1732	-0.2179	0.3790	-0.0786	-0.1313	0.3699	-0.2597			
(13)	-0.1063	-0.0971	-0.1324	-0.0504	-0.1237	-0.2581	0.3974	0.0682	-0.0205	0.4333	-0.4406	0.5437		
(14)	0.1419	0.1716	0.1457	0.1229	0.3313	0.3900	-0.3217	0.3615	0.4366	-0.2424	0.2937	-0.3421	-0.5151	
(15)	0.0182	0.0246	0.0223	-0.0131	0.1158	0.3769	-0.2356	0.2916	0.3345	-0.1589	0.2844	-0.2799	-0.5081	0.5414
(16)	0.0128	0.0146	-0.0142	0.0559	-0.1081	-0.3504	0.3879	-0.0512	-0.1576	0.1578	-0.4983	0.3245	0.5426	-0.3364
(17)	0.1925	0.2251	0.2533	0.1761	0.2289	0.4561	-0.4013	0.3912	0.4120	-0.0705	0.1814	-0.2732	-0.1931	0.2841
(18)	-0.2361	-0.2771	-0.2887	-0.2114	-0.1474	-0.1205	0.3144	-0.0780	-0.1031	0.1914	-0.0718	0.2428	0.2049	-0.1086
(19)	0.1297	0.1185	0.1683	0.1198	0.1572	0.3269	-0.2245	0.3191	0.2515	-0.0161	0.0437	-0.2177	-0.1320	0.2461
(20)	0.2815	0.3145	0.3512	0.2558	0.2198	0.2929	-0.4160	0.2676	0.2733	-0.1841	0.0813	-0.3506	-0.2687	0.2365
(21)	0.2201	0.2650	0.3056	0.2378	0.2360	0.2781	-0.3758	0.1721	0.2449	-0.2094	0.1219	-0.2747	-0.2584	0.2277
(22)	0.0153	0.0064	0.0166	-0.0165	0.0003	0.1251	-0.1073	0.0030	0.0424	-0.0728	0.1449	-0.0583	-0.1661	0.0887
(23)	0.0830	0.0854	0.1529	0.0877	0.0807	0.2651	-0.3146	0.1649	0.1714	-0.1097	0.1714	-0.2257	-0.3019	0.2340
(24)	0.3590	0.4463	0.3830	0.3593	0.3785	0.1521	-0.2239	0.1593	0.1776	-0.1485	-0.0879	-0.1133	-0.0559	0.1546
(25)	0.2961	0.3140	0.2916	0.2342	0.3418	0.1955	-0.2897	0.1704	0.2213	-0.1102	0.0405	-0.1622	-0.1228	0.1884
(26)	0.3807	0.4121	0.4018	0.3065	0.3643	0.2221	-0.3162	0.1591	0.1937	-0.1285	0.0292	-0.2039	-0.1425	0.1755
(27)	0.3635	0.4425	0.3635	0.3385	0.4817	0.2563	-0.3286	0.1761	0.2570	-0.1711	-0.0092	-0.1593	-0.1323	0.2334
(28)	0.0226	-0.0318	-0.0322	0.0229	-0.0950	-0.3067	0.3067	-0.0593	-0.1451	0.0161	-0.3125	0.2450	0.2628	-0.1872
(29)	-0.1199	-0.1617	-0.1861	-0.0874	-0.1981	-0.4291	0.4826	-0.1634	-0.2617	0.1484	-0.3963	0.3925	0.3915	-0.3324

	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
(16)	-0.3281													
(17)	0.2576	-0.3014												
(18)	-0.0491	0.1380	-0.2086											
(19)	0.2064	-0.1242	0.4138	0.1296										
(20)	0.1599	-0.2015	0.4262	-0.8107	0.4764									
(21)	0.1687	-0.2249	0.3450	-0.3106	0.1904	0.3828								
(22)	0.1346	-0.1247	0.0874	-0.0713	0.0166	0.0692	0.1051							
(23)	0.2256	-0.2459	0.2705	-0.1718	0.1987	0.2754	0.2490	0.1777						
(24)	0.0602	-0.0240	0.1376	-0.0746	0.1017	0.1280	0.1378	-0.0370	0.0671					
(25)	0.0745	-0.1240	0.1992	-0.1192	0.1036	0.1674	0.1690	0.0512	0.1263	0.3053				
(26)	0.0636	-0.1323	0.2136	-0.1389	0.1655	0.2216	0.2181	0.0229	0.1208	0.3286	0.5924			
(27)	0.0981	-0.1595	0.2324	-0.1525	0.1228	0.2049	0.2248	0.0576	0.0877	0.3244	0.3100	0.3518		
(28)	-0.2066	0.4461	-0.2856	0.1169	-0.1074	-0.1699	-0.1680	-0.1253	-0.1375	-0.0812	-0.1194	-0.0963	-0.2097	
(29)	-0.2555	0.5228	-0.4252	0.2118	-0.2355	-0.3316	-0.2513	-0.1286	-0.2274	-0.1355	-0.1830	-0.2576	-0.2751	0.5220

Listed below by number are the criterion variables that appear in the correlation matrix:

(1) Quick Test of intelligence
(2) GATB-J vocabulary
(3) Gates reading test
(4) Job information test
(5) Self-concept of school ability
(6) Positive school attitudes
(7) Negative school attitudes
(8) Need for self-utilization
(9) Need for self-development
(10) Test anxiety
(11) Need for social approval
(12) Somatic symptoms
(13) Negative affective states
(14) Self-esteem
(15) Happiness
(16) Impulse to aggression
(17) Social values
(18) "Job that doesn't bug me"
(19) "Job that pays off"
(20) Ambitious job attitudes
(21) Internal control
(22) Trust in people
(23) Trust in government
(24) Political knowledge
(25) College plans
(26) Occupational aspirations
(27) Academic achievement (grades)
(28) Delinquent behaviors
(29) Rebellious behavior in school

Appendix E

GUIDE TO FIGURES

The first part of this appendix is an explanation and rationale for the format used in most of our figures. The second part provides tabular data corresponding to each figure presented in the monograph. The brief explanation of format should be helpful to all readers; the tabular data will be needed by only a few.

Standard Format for Figures. A single general-purpose format has been used in almost all of the figures.* This standardization has two overriding advantages -- it makes possible a direct comparison of the relationships in one figure with those in another, and (hopefully) it simplifies the reader's job of interpreting fairly complex data displays.

The following features are included in all standard figures:

1. A heavy solid line connecting the mean criterion scores for each category of the predictor variable.
2. A fine horizontal line across the middle of the figure indicating the mean criterion score for all individuals (i.e., the grand mean).
3. A shaded bar for each predictor category:
    a. The height of the bar indicates the range of ± one standard deviation for that predictor category. (This range includes about two-thirds of all individual criterion scores within the predictor category.)
    b. The width of the bar is proportional to the percentage of respondents who are in that predictor category.

The following additional features are included in figures used in Chapters 5 through 10:

4. A dashed line connecting the adjusted** criterion scores controlled for all family background factors (except the one serving as predictor in the figure).
5. A dotted line connecting the adjusted** criterion scores controlled for intelligence plus all family background factors (except the predictor).

---

[*] The only exceptions are Figures 4-9, 4-10, 4-11, 4-12, and 10-2, all of which are self-explanatory.

[**] All adjustments are made using Multiple Classification Analysis, a multivariate procedure described in Chapter 4.

The reader looking at the figures in Chapters 3 and 4 may wonder why we have included the heavy solid line that connects mean criterion scores, since we could just as well indicate the subgroup means separately at the midpoint of each shaded bar. In fact, for predictors that are nominal scales, such as race and religion, it may appear inappropriate to draw a connecting line between categories. Our reason for using a "profile" line even when the predictor is only a nominal scale becomes apparent in later chapters (see Figure 5-5 for example); profile lines seem the most convenient way of using a single figure to show several different versions of a relationship (depending upon adjustments for other background factors and intelligence). In order to increase consistency, we have used profile lines in the early figures as well as in the later ones where they are a necessity.

The information provided by the shaded bars is not essential to an understanding of the basic relationships displayed in the figures, but we think it can help in interpretation. Displaying the range from minus one to plus one standard deviation reminds us of the considerable overlap between categories, even when their means are clearly different. Occasionally this range also indicates that criterion scores vary more widely within certain predictor categories. Setting the width of the shaded bars proportional to the number of individuals in each predictor category provides further perspective. It reminds us that some categories are rather small, and that large effects involving only these categories cannot account for a great deal of the total criterion variance -- even when the effects are very important.

A few other notes on standardization procedures may be helpful in interpreting the figures. The ordinate (Y axis) in each figure has been scaled in such a way that the standard deviation for the dependent variable is always equal to about 3.33 centimeters. Applying this procedure consistently means that equally large effects will appear equally large from one figure (and one set of variables) to another. The abscissa (X axis) in each figure is also designed for comparability whenever the predictor variable can be treated as an interval scale. The total span of the x-axis is kept roughly equal, whether the number of predictor categories shown within that span is eight (for the family relations variable or number of siblings) or six (for socioeconomic level) or five (for the Quick Test of intelligence). Within each of these predictor scales, the bars are centered at equal intervals.

Hopefully, the several "gimmicks" used in these figures will not overshadow the findings they are designed to display. Our intention has been to present our findings in such a way that much of the rich detail of relationship can be grasped more easily than would be possible in tabular presentation. For some purposes, of course, it is useful to know the exact values underlying a graphic display. Accordingly, we have devoted the second part of this appendix to presenting the tabular data underlying each of our figures.

Tabular Data Corresponding to Figures. Each table on the following pages has been numbered to match the appropriate figure in the text, with an "E" added as a prefix (thus Table E-3-1 corresponds to Figure 3-1). The tables are self-explanatory and correspond exactly to the figures, except for one minor departure:

In the case of three predictor variables -- socioeconomic level, family relations, and community size -- the small missing data category was not included in figures. The missing data cases are summarized in the tables. They were also included in the computation of Eta and Beta statistics. (This inclusion occurs automatically in our use of Multiple Classification Analysis; it makes virtually no difference in the resulting statistics.)

TABLE E-3-1

MEAN SOCIOECONOMIC LEVEL FOR EACH CATEGORY OF FAMILY SIZE

Grand Mean = 4.99
Grand Standard Deviation = .80

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
0 siblings	129	5.3	5.21	.73
1 sibling	501	20.6	5.21	.73
2 siblings	552	22.7	5.18	.73
3 siblings	471	19.4	5.03	.77
4 siblings	297	12.2	4.91	.81
5 siblings	185	7.6	4.72	.77
6 siblings	117	4.8	4.48	.73
7 or more siblings	178	7.3	4.30	.75
			Eta = .34	

TABLE E-3-2

MEAN SOCIOECONOMIC LEVEL FOR EACH CATEGORY OF BROKEN HOME

Grand Mean = 4.99
Grand Standard Deviation = .80

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
Home intact	1954	80.4	5.03	.79
Home broken by death	182	7.5	5.00	.92
Home broken by divorce, etc.	294	12.1	4.72	.75
			Eta = .13	

TABLE E-3-3

MEAN SOCIOECONOMIC LEVEL FOR EACH CATEGORY OF RELIGIOUS PREFERENCE

Grand Mean = 4.99
Grand Standard Deviation = .80

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
Jewish	65	2.7	5.69	.61
Roman Catholic, Eastern Orthodox	480	19.8	4.97	.71
Baptist	551	22.7	4.65	.78
Church of Christ, etc.	159	6.5	4.92	.79
Lutheran	201	8.3	5.05	.68
Methodist	342	14.1	5.14	.79
Presbyterian	176	7.2	5.29	.82
Episcopal	53	2.2	5.73	.71
Other Protestant	94	3.9	5.13	.86
Other and Missing Data	309	12.7	4.98	.81

Eta = .31

TABLE E-3-4

MEAN NUMBER OF SIBLINGS FOR EACH CATEGORY OF RELIGIOUS PREFERENCE

Grand Mean = 3.04
Grand Standard Deviation = 2.18

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
Jewish	65	2.6	1.51	1.28
Roman Catholic, Eastern Orthodox	492	19.6	3.18	2.20
Baptist	564	22.4	3.33	2.46
Church of Christ, etc.	162	6.4	3.05	2.02
Lutheran	203	8.1	2.65	1.93
Methodist	344	13.7	2.96	1.91
Presbyterian	177	7.0	2.72	2.04
Episcopal	53	2.1	2.55	1.92
Other Protestant	94	3.7	2.87	1.71
Other and Missing Data	360	14.3	3.23	2.30
			Eta = .16	

TABLE E-3-5

MEAN SOCIOECONOMIC LEVEL FOR EACH CATEGORY OF FAMILY POLITICAL PREFERENCE

Grand Mean = 4.99
Grand Standard Deviation = .80

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
Strongly Republican	181	7.4	5.22	.87
Mildly Republican	390	16.0	5.23	.81
Mildly Democrat	591	24.3	4.94	.76
Strongly Democrat	342	14.1	4.86	.75
Other	926	38.1	4.93	.80
			Eta = .17	

TABLE E-3-6

MEAN SOCIOECONOMIC LEVEL FOR EACH CATEGORY OF COMMUNITY SIZE WHERE RESPONDENT WAS RAISED

Grand Mean = 4.99
Grand Standard Deviation = .80

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
Farm	267	11.0	4.54	.72
Country, but not a farm	285	11.7	4.65	.75
Town	710	29.2	5.14	.83
Small city	500	20.6	5.15	.76
Large city	633	26.0	5.05	.73
Other and Missing Data	35	1.4	4.80	.94

Eta = .28

TABLE E-3-7

MEAN SOCIOECONOMIC LEVEL FOR EACH CATEGORY OF RACE

Grand Mean = 4.99
Grand Standard Deviation = .80

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
All whites	2129	87.6	5.07	.77
Integrated blacks	76	3.1	4.82	.86
Northern segregated blacks	53	2.1	4.78	.60
Southern segregated blacks	131	5.3	4.09	.63
Other racial minorities	41	1.6	4.43	.75

Eta = .30

TABLE E-3-8

MEAN NUMBER OF SIBLINGS FOR EACH CATEGORY OF RACE

Grand Mean = 3.04
Grand Standard Deviation = 2.18

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
All whites	2177	86.5	2.79	1.95
Integrated blacks	79	3.1	3.84	2.58
Northern segregated blacks	72	2.8	4.65	2.92
Southern segregated blacks	140	5.5	5.05	2.81
Other racial minorities	46	1.8	4.74	2.80

Eta = .30

TABLE E-4-1

MEAN QUICK TEST SCORES FOR EACH CATEGORY OF SOCIOECONOMIC LEVEL

Grand Mean = 108.5
Grand Standard Deviation = 12.5

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
1 (low)	166	6.6	96.87	14.17
2	384	15.3	101.86	13.62
3	687	27.3	108.28	10.45
4	648	25.8	110.80	10.03
5	365	14.5	113.99	10.09
6 (high)	180	7.2	118.28	9.25
Missing Data	84	3.3	100.44	14.67

Eta = .44

TABLE E-4-2

MEAN QUICK TEST SCORES FOR EACH
CATEGORY OF FAMILY SIZE

Grand Mean = 108.5
Grand Standard Deviation = 12.5

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
0 siblings	139	5.5	111.71	9.56
1 sibling	507	20.2	112.83	10.36
2 siblings	562	22.4	110.74	10.55
3 siblings	482	19.2	108.19	12.82
4 siblings	311	12.4	107.22	12.30
5 siblings	194	7.7	105.76	11.45
6 siblings	126	5.0	102.18	13.83
7 or more siblings	193	7.7	97.76	15.03
			Eta = .33	

TABLE E-4-3

MEAN QUICK TEST SCORES FOR EACH
CATEGORY OF BROKEN HOME

Grand Mean = 108.5
Grand Standard Deviation = 12.5

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
Home intact	1997	79.4	109.27	11.90
Home broken by death	200	8.0	107.56	13.12
Home broken by divorce, etc.	317	12.6	104.06	14.23
			Eta = .14	

TABLE E-4-4

MEAN QUICK TEST SCORES FOR EACH CATEGORY OF FAMILY RELATIONS

Grand Mean = 108.5
Grand Standard Deviation = 12.5

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
1 (poor)	106	4.2	108.78	13.03
2	199	7.9	106.30	14.61
3	344	13.7	105.69	12.65
4	482	19.2	107.88	12.21
5	555	22.1	108.83	13.25
6	427	17.0	110.93	11.31
7	259	10.3	110.92	10.87
8 (good)	90	3.6	109.60	9.03
9 Missing Data	52	2.1	102.32	9.67
			Eta = .16	

TABLE E-4-5

MEAN QUICK TEST SCORES FOR EACH CATEGORY OF RELIGIOUS PREFERENCE

Grand Mean = 108.5
Grand Standard Deviation = 12.5

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
Jewish	65	2.6	117.66	8.98
Roman Catholic, Eastern Orthodox	492	19.6	109.04	11.39
Baptist	564	22.4	104.18	13.54
Church of Christ, etc.	162	6.4	106.01	12.61
Lutheran	203	8.1	110.15	11.43
Methodist	344	13.7	108.76	12.37
Presbyterian	177	7.0	113.52	10.82
Episcopal	53	2.1	115.04	11.04
Other Protestant	94	3.7	112.96	10.20
Other and Missing Data	360	14.3	108.09	11.98

Eta = .26

Table E-4-6

MEAN QUICK TEST SCORES FOR EACH CATEGORY OF FAMILY POLITICAL PREFERENCE

Grand Mean = 108.5
Grand Standard Deviation = 12.5

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
Strongly Republican	181	7.2	109.70	11.97
Mildly Republican	399	15.9	111.27	12.63
Mildly Democrat	600	23.9	109.37	11.99
Strongly Democrat	347	13.8	106.85	11.73
Other	987	39.3	107.16	12.80

Eta = .13

TABLE E-4-7

MEAN QUICK TEST SCORES FOR EACH CATEGORY OF COMMUNITY SIZE WHERE RESPONDENT WAS RAISED

Grand Mean = 108.5
Grand Standard Deviation = 12.5

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
Farm	275	10.9	103.24	13.75
Country, but not a farm	290	11.5	106.79	14.31
Town	722	28.7	110.13	11.98
Small city	525	20.9	109.57	11.55
Large city	665	26.5	108.71	11.66
Other and Missing Data	37	1.5	109.08	12.16

Eta = .17

TABLE E-4-8

MEAN QUICK TEST SCORES FOR EACH CATEGORY OF RACE

Grand Mean = 108.5
Grand Standard Deviation = 12.5

Predictor Category	Weighted N	Percent	Unadjusted Mean	Standard Deviation
All whites	2177	86.6	110.42	10.78
Integrated blacks	79	3.1	104.89	11.09
Northern segregated blacks	72	2.9	101.61	11.00
Southern segregated blacks	140	5.6	87.05	13.56
Other racial minorities	46	1.8	99.04	15.18

Eta = .46

TABLE E-4-9

MEAN SCORES ON QUICK TEST, AND QUICK TEST NET OF SOCIOECONOMIC LEVEL, FOR EACH CATEGORY OF FAMILY SIZE

Family Size (Number of Siblings)	Mean Score on Quick Test	Quick Test Net of Socioeconomic Level
0 siblings	111.7	110.9
1 sibling	112.8	111.2
2 siblings	110.7	109.4
3 siblings	108.2	107.8
4 siblings	107.2	108.0
5 siblings	105.8	107.4
6 siblings	102.2	106.0
7 or more siblings	97.8	102.5

TABLE E-4-10

MEAN QUICK TEST SCORES (EXPRESSED AS DEVIATIONS FROM MEAN QUICK TEST SCORE FOR ALL WHITES[a])

Racial Subgroup	Difference From Whites When There Are No Controls	Difference From Whites When SEL Is Controlled
Blacks in Integrated Schools	-5.5	-3.3
Blacks in Northern Segregated Schools	-8.8	-5.5
Blacks in Southern Segregated Schools	-23.0	-16.6
Other Racial Minorities	-11.0	-6.7

---

[a] Mean Quick Test score for all whites = 110.4

TABLE E-4-11

PERCENTAGE OF CASES PER QUICK TEST SCORE CATEGORY:
WHITES, INTEGRATED BLACKS, AND SOUTHERN SEGREGATED BLACKS

Quick Test Score	Percent Whites	Percent Integrated Blacks	Percent Southern Segregated Blacks
69 or less	.1%	1.3%	9.3%
70 - 80	.5%	1.3%	22.1%
81 - 91	3.8%	10.1%	37.1%
92 - 102	18.2%	19.0%	15.0%
103 - 113	38.7%	49.4%	13.6%
114 - 124	29.5%	17.7%	2.9%
125 or more	9.2%	1.3%	0.0%

TABLE E-5-1

MEAN SELF-CONCEPT OF SCHOOL ABILITY (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF QUICK TEST SCORES

Grand Mean = 4.13
Grand Standard Deviation = .73

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2
0-91	229	9.1	3.75	.74	-.39	-.38
92-102	463	18.5	3.77	.60	-.36	-.30
103-113	938	37.4	4.03	.63	-.11	-.10
114-124	674	26.9	4.44	.65	+.31	+.27
125-150	203	8.1	4.87	.69	+.73	+.64
					Eta=.46	Beta=.40

TABLE E-5-2

MEAN SELF-CONCEPT OF SCHOOL ABILITY (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF SOCIOECONOMIC LEVEL

Grand Mean = 4.13
Grand Standard Deviation = .73

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
1 (low)	166	6.6	3.76	.75	-.37	-.28	-.16
2	382	15.2	3.92	.67	-.21	-.15	-.07
3	685	27.3	4.01	.67	-.13	-.11	-.09
4	647	25.8	4.21	.67	+.08	+.05	+.04
5	364	14.5	4.39	.75	+.25	+.20	+.11
6 (high)	180	7.2	4.70	.65	+.57	+.49	+.31
Missing Data	83	3.3	3.91	na	-.23	-.12	-.04
					Eta= .33	Beta= .26	Beta= .16

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[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-5-3

MEAN SELF-CONCEPT OF SCHOOL ABILITY (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF FAMILY SIZE

Grand Mean = 4.13
Grand Standard Deviation = .73

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
0 siblings	138	5.5	4.35	.70	+.22	+.20	+.15
1 sibling	506	20.2	4.29	.70	+.15	+.08	+.03
2 siblings	560	22.3	4.20	.70	+.07	+.03	+.02
3 siblings	481	19.2	4.16	.75	+.03	+.04	+.05
4 siblings	311	12.4	4.04	.72	-.10	-.07	-.05
5 siblings	194	7.7	3.96	.62	-.18	-.11	-.09
6 siblings	124	4.9	3.93	.71	-.21	-.11	-.07
7 or more siblings	193	7.7	3.78	.74	-.35	-.21	-.17
					Eta= .21	Beta= .13	Beta= .10

TABLE E-5-4

MEAN SELF-CONCEPT OF SCHOOL ABILITY (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF FAMILY RELATIONS

Grand Mean = 4.13
Grand Standard Deviation = .73

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
1 (poor)	106	4.2	3.97	.92	-.17	-.12	-.14
2	198	7.9	3.95	.75	-.18	-.10	-.11
3	342	13.6	4.00	.76	-.13	-.08	-.03
4	480	19.1	4.04	.73	-.10	-.10	-.09
5	553	22.1	4.20	.72	+.06	+.04	+.04
6	427	17.0	4.25	.65	+.11	+.06	+.04
7	259	10.3	4.37	.63	+.23	+.20	+.17
8 (good)	90	3.6	4.29	.69	+.15	+.10	+.12
9 Missing Data	52	2.1	3.87	na	-.26	-.06	-.03
					Eta= .19	Beta= .14	Beta= .12

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-5-5

MEAN SELF-CONCEPT OF SCHOOL ABILITY (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF RACE

Grand Mean = 4.13
Grand Standard Deviation = .73

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
All whites	2171	86.6	4.15	.73	+.01	-.02	-.04
Integrated blacks	79	3.2	4.14	.67	+.01	+.11	+.16
Northern segregated blacks	72	2.9	4.08	.67	-.05	+.13	+.22
Southern segregated blacks	140	5.6	3.97	.66	-.17	+.14	+.32
Other racial minorities	45	1.8	4.11	.77	-.02	+.19	+.28
					Eta= .06	Beta= .07	Beta= .14

TABLE E-6-1A

MEAN POSITIVE SCHOOL ATTITUDES (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF RACE

Grand Mean = 3.25
Grand Standard Deviation = .53

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
All whites	2162	86.8	3.23	.53	-.01	-.02	-.02
Integrated blacks	77	3.1	3.35	.49	+.10	+.10	+.10
Northern segregated blacks	67	2.7	3.27	.55	+.03	+.09	+.10
Southern segregated blacks	140	5.6	3.38	.54	+.13	+.22	+.22
Other racial minorities	45	1.8	3.22	.53	-.03	+.005	+.01
					Eta= .07	Beta= .11	Beta= .12

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-6-1B

MEAN NEGATIVE SCHOOL ATTITUDES (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF RACE

Grand Mean = 1.91
Grand Standard Deviation = .61

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
All whites	2153	87.0	1.90	.59	-.01	+.005	+.02
Integrated blacks	76	3.1	1.76	.59	-.15	-.19	-.20
Northern segregated blacks	67	2.7	2.12	.70	+.22	+.11	+.06
Southern segregated blacks	135	5.5	2.05	.72	+.14	-.04	-.19
Other racial minorities	44	1.8	2.10	.70	+.19	+.08	+.03
					Eta= .10	Beta= .07	Beta= .10

TABLE E-6-2

MEAN NEED FOR SOCIAL APPROVAL (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF FAMILY RELATIONS

Grand Mean = 1.48
Grand Standard Deviation = .17

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
1 (poor)	105	4.2	1.42	.17	-.06	-.07	-.07
2	197	7.9	1.43	.14	-.05	-.05	-.05
3	337	13.6	1.45	.17	-.04	-.04	-.04
4	472	19.0	1.45	.16	-.03	-.03	-.03
5	549	22.1	1.49	.15	+.004	+.005	+.006
6	424	17.1	1.48	.16	+.002	+.008	+.01
7	257	10.4	1.56	.17	+.08	+.08	+.08
8 (good)	90	3.6	1.64	.17	+.16	+.16	+.16
9 Missing Data	48	1.9	1.55	na	+.07	+.04	+.03
					Eta= .29	Beta= .30	Beta= .31

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-7-1

MEAN SELF-ESTEEM (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF FAMILY RELATIONS

Grand Mean = 3.75
Grand Standard Deviation = .52

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a]		
					1	2	3
1 (poor)	106	4.2	3.38	.68	-.37	-.36	-.36
2	199	8.0	3.53	.49	-.22	-.20	-.20
3	341	13.6	3.59	.46	-.16	-.15	-.14
4	478	19.1	3.62	.51	-.13	-.13	-.13
5	552	22.1	3.81	.45	+.06	+.05	+.05
6	426	17.0	3.86	.48	+.11	+.11	+.10
7	259	10.4	4.04	.46	+.29	+.29	+.29
8 (good)	90	3.6	4.21	.41	+.46	+.47	+.47
9 Missing Data	49	2.0	3.76	na	+.01	+.03	+.03
					Eta= .36	Beta= .36	Beta= .35

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-7-2

MEAN SELF-ESTEEM (ADJUSTED AND UNADJUSTED)
FOR EACH CATEGORY OF RELIGIOUS PREFERENCE

Grand Mean = 3.75
Grand Standard Deviation = .52

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
Jewish	65	2.6	3.99	.59	+.24	+.14	+.12
Catholic, Orthodox	489	19.6	3.79	.51	+.04	+.06	+.06
Baptist	559	22.4	3.74	.51	-.006	-.02	-.02
Church of Christ, etc.	162	6.5	3.73	.51	-.02	-.01	+.002
Lutheran	201	8.0	3.66	.51	-.08	-.07	-.07
Methodist	343	13.7	3.76	.57	+.01	-.02	-.02
Presbyterian	177	7.1	3.75	.49	+.002	-.01	-.02
Episcopal	53	2.1	3.83	.45	+.08	+.001	-.002
Other Protestant	94	3.8	3.83	.52	+.08	+.07	+.05
Other and Missing Data	357	14.3	3.67	.50	-.08	-.03	-.03
					Eta= .12	Beta= .09	Beta= .08

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-7-3

MEAN SELF-ESTEEM (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF RACE

Grand Mean = 3.75
Grand Standard Deviation = .52

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
All whites	2169	86.8	3.74	.52	-.01	-.02	-.02
Integrated blacks	79	3.2	3.86	.49	+.11	+.12	+.13
Northern segregated blacks	70	2.8	3.90	.44	+.15	+.19	+.22
Southern segregated blacks	137	5.5	3.77	.51	+.02	+.13	+.22
Other racial minorities	45	1.8	3.64	.58	-.10	-.09	-.07
					Eta= .07	Beta= .10	Beta= .14

TABLE E-7-4

MEAN IMPULSE TO AGGRESSION (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF RACE

Grand Mean = 2.54
Grand Standard Deviation = .82

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
All whites	2115	86.9	2.58	.81	+.04	+.05	+.05
Integrated blacks	77	3.2	2.21	.79	-.33	-.32	-.31
Northern segregated blacks	67	2.8	2.14	.73	-.40	-.41	-.42
Southern segregated blacks	130	5.3	2.33	.94	-.20	-.27	-.31
Other racial minorities	44	1.8	2.27	.84	-.27	-.22	-.22
					Eta= .14	Beta= .15	Beta= .15

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-8-1

MEAN AMBITIOUS JOB ATTITUDES (ADJUSTED AND UNADJUSTED)
FOR EACH CATEGORY OF FAMILY RELATIONS

Grand Mean = 5.06
Grand Standard Deviation = .70

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
1 (poor)	105	4.2	4.89	.74	-.17	-.18	-.18
2	194	7.8	4.66	.73	-.40	-.37	-.37
3	337	13.6	4.82	.67	-.25	-.22	-.20
4	476	19.2	4.94	.67	-.12	-.12	-.12
5	552	22.3	5.15	.64	+.09	+.08	+.08
6	426	17.2	5.29	.62	+.22	+.20	+.19
7	259	10.5	5.39	.63	+.32	+.31	+.29
8 (good)	89	3.6	5.39	.68	+.32	+.31	+.30
9 Missing Data	35	1.4	4.52	na	-.54	-.38	-.38
					Eta= .33	Beta= .31	Beta= .30

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-8-2

MEAN AMBITIOUS JOB ATTITUDES (ADJUSTED AND UNADJUSTED)
FOR EACH CATEGORY OF RELIGIOUS PREFERENCE

Grand Mean = 5.06
Grand Standard Deviation = .70

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a]		
					1	2	3
Jewish	65	2.6	5.32	.55	+.26	+.12	+.10
Catholic, Orthodox	488	19.7	5.08	.68	+.02	+.001	+.001
Baptist	561	22.7	4.91	.71	-.15	-.08	-.07
Church of Christ, etc.	161	6.5	4.99	.65	-.07	-.05	-.03
Lutheran	202	8.2	5.10	.75	+.04	+.04	+.04
Methodist	342	13.8	5.20	.67	+.14	+.07	+.07
Presbyterian	174	7.0	5.10	.69	+.04	-.01	-.03
Episcopal	50	2.0	5.33	.69	+.27	+.12	+.10
Other Protestant	93	3.8	5.27	.73	+.20	+.16	+.13
Other and Missing Data	337	13.6	5.00	.69	-.07	-.02	-.02
					Eta= .17	Beta= .09	Beta= .08

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-8-3

MEAN POLITICAL KNOWLEDGE (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF RELIGIOUS PREFERENCE

Grand Mean = 2.63
Grand Standard Deviation = 1.46

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
Jewish	65	2.7	4.05	1.27	+1.42	+.95	+.86
Catholic, Orthodox	476	19.4	2.73	1.41	+.10	+.09	+.09
Baptist	551	22.5	2.54	1.45	-.09	+.01	+.05
Chruch of Christ, etc.	160	6.5	2.49	1.41	-.14	-.10	-.02
Lutheran	195	8.0	2.75	1.51	+.12	+.10	+.07
Methodist	341	13.9	2.67	1.44	+.04	-.04	-.01
Presbyterian	173	7.1	2.86	1.29	+.23	+.05	-.02
Episcopal	53	2.2	3.13	1.36	+.50	+.13	+.09
Other Protestant	93	3.8	2.71	1.47	+.08	+.08	-.04
Other and Missing Data	343	14.0	2.11	1.43	-.53	-.36	-.37
					Eta= .22	Beta= .15	Beta= .14

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-10-1

MEAN OCCUPATIONAL ASPIRATIONS (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF QUICK TEST SCORES

Grand Mean = 60.34
Grand Standard Deviation = 26.52

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2
0-91	179	9.4	39.48	25.85	-20.9	-16.1
92-102	336	17.7	50.72	28.29	-9.6	-6.4
103-113	706	37.1	60.15	25.58	-.2	-.1
114-124	518	27.2	70.02	21.34	+9.7	+7.0
125-150	163	8.6	73.19	20.63	+12.9	+9.0
					Eta=.37	Beta=.27

TABLE E-10-3

MEAN OCCUPATIONAL ASPIRATIONS (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF SOCIOECONOMIC LEVEL

Grand Mean = 60.48
Grand Standard Deviation = 26.50

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
1 (low)	117	6.2	39.93	26.29	-20.4	-13.8	-10.9
2	295	15.5	48.40	27.06	-11.9	-8.4	-6.5
3	517	27.2	57.63	26.59	-2.7	-2.3	-2.2
4	496	26.1	64.37	24.35	+4.0	+2.7	+2.3
5	274	14.4	72.04	20.98	+11.7	+8.0	+6.5
6 (high)	145	7.6	76.66	16.94	+16.3	+12.6	+9.3
Missing Data	58	3.0	56.10	na	-4.2	-1.2	+.8
					Eta= .37	Beta= .26	Beta= .20

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-10-4

MEAN OCCUPATIONAL ASPIRATIONS (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF FAMILY SIZE

Grand Mean = 60.34
Grand Standard Deviation = 26.52

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a]		
					1	2	3
0 siblings	104	5.5	67.32	22.52	+7.0	+4.6	+2.6
1 sibling	397	20.9	68.31	23.17	+8.0	+4.5	+3.1
2 siblings	424	22.3	64.54	25.18	+4.2	+1.5	+1.2
3 siblings	361	19.0	59.57	26.42	-.8	-.2	+.4
4 siblings	246	12.9	54.89	27.59	-5.5	-3.6	-3.1
5 siblings	130	6.8	54.52	27.85	-5.8	-3.1	-2.4
6 siblings	92	4.8	47.25	29.03	-13.1	-7.6	-5.7
7 or more siblings	148	7.8	46.28	25.41	-14.1	-5.8	-3.9
					Eta= .27	Beta= .14	Beta= .10

TABLE E-10-5

MEAN OCCUPATIONAL ASPIRATIONS (ADJUSTED AND UNADJUSTED) FOR EACH CATEGORY OF FAMILY RELATIONS

Grand Mean = 60.34
Grand Standard Deviation = 26.52

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a]		
					1	2	3
1 (poor)	79	4.2	58.42	27.79	-1.9	-.2	-.6
2	142	7.5	49.91	27.23	-10.4	-7.2	-7.3
3	247	13.0	55.84	26.88	-4.5	-3.1	-1.8
4	388	20.4	59.84	25.90	-.5	-.9	-.6
5	407	21.4	62.07	27.07	+1.7	+1.1	+1.1
6	324	17.0	64.71	25.44	+4.4	+2.6	+1.8
7	209	11.0	62.91	25.20	+2.6	+2.7	+2.1
8 (good)	71	3.7	66.79	23.70	+6.4	+4.9	+4.5
9 Missing Data	35	1.8	55.51	na	-4.8	-1.3	-.7
					Eta= .16	Beta= .11	Beta= .10

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-10-6

MEAN OCCUPATIONAL ASPIRATIONS (ADJUSTED AND UNADJUSTED)
FOR EACH CATEGORY OF RELIGIOUS PREFERENCE

Grand Mean = 60.34
Grand Standard Deviation = 26.52

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
Jewish	55	2.9	78.89	17.97	+18.6	+5.7	+4.6
Catholic, Orthodox	377	19.8	63.50	23.57	+3.2	+2.8	+2.6
Baptist	422	22.2	55.55	28.96	-4.8	-1.4	-.8
Church of Christ, etc.	124	6.5	57.00	26.45	-3.3	-1.7	-.5
Lutheran	150	7.9	59.55	26.48	-.8	-.0	-.7
Methodist	256	13.5	61.10	25.29	+.8	-.1	+.3
Presbyterian	126	6.6	64.13	26.93	+3.8	+1.0	+.2
Episcopal	41	2.2	71.73	20.38	+11.4	+2.8	+1.4
Other Protestant	76	4.0	61.03	26.74	+.7	+.4	-1.2
Other and Missing Data	275	14.5	57.27	26.96	-3.1	-3.1	-3.0
					Eta= .18	Beta= .08	Beta= .07

---

[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

TABLE E-10-7

MEAN OCCUPATIONAL ASPIRATIONS (ADJUSTED AND UNADJUSTED)
FOR EACH CATEGORY OF COMMUNITY SIZE
WHERE RESPONDENT WAS RAISED

Grand Mean = 60.34
Grand Standard Deviation = 26.52

Predictor Category	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
Farm	221	11.6	42.48	28.23	-17.9	-12.0	-11.4
Country, but not a farm	214	11.3	52.08	28.77	-8.3	-3.4	-3.3
Town	526	27.7	64.61	24.35	+4.3	+2.3	+2.0
Small city	382	20.1	61.45	24.89	+1.1	-.8	-.7
Large city	533	28.0	66.03	24.13	+5.7	+4.7	+4.6
Other and Missing Data	26	1.4	61.19	na	+.9	-.0	-.9
					Eta= .29	Beta= .19	Beta= .18

TABLE E-10-8

MEAN OCCUPATIONAL ASPIRATIONS (ADJUSTED AND UNADJUSTED)
FOR EACH CATEGORY OF RACE

Grand Mean = 60.34
Grand Standard Deviation = 26.52

Predictor Cateogry	Weighted N	%	Unadj. Mean	S.D.	Deviations from Grand Mean[a] 1	2	3
All whites	1622	85.3	61.37	26.24	+1.0	-.4	-1.2
Integrated blacks	59	3.1	60.64	26.86	+.3	+4.1	+4.9
Northern segregated blacks	60	3.2	61.33	25.76	+1.0	+3.9	+5.6
Southern segregated blacks	123	6.5	47.14	27.29	-13.2	+1.5	+9.9
Other racial minorities	38	2.0	57.29	26.44	-3.0	+.9	+3.7
					Eta= .13	Beta= .04	Beta= .12

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[a] 1: Unadjusted deviations from grand mean
2: Deviations adjusted for family background factors (using MCA)
3: Deviations adjusted for family background factors plus QT

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